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Two Case Studies from Mexico and Morocco

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Würzburg/Baku, April 2014 Julius Arnegger

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Acronyms

AHC	Asociación de Hoteles de Cancún (Cancún Hotel Association)
CHMBM	Clearing House Mechanism on Biodiversity of Morocco
CILQ	Cross-industry location quotient
COE	Compensation of employees
CONANP	Comisión de Áreas Naturales Protegidas (National Commission for Protected Areas)
FMDT	Forum Marocain du Tourisme (Moroccan Tourism Forum)
FONATUR	Fondo Nacional de Fomento al Turismo (National Fund for Tourism Promotion)
FPTRM	Fideicomiso para la Promoción Turística de la Riviera Maya (approx.: Riviera Maya Destination Marketing Office)
GNI	Gross national income
HCEFLCD	Haut Commissariat aux Eaux et Forêts et à la Lutte contre la Désertification (High Commission for Water, Forests and Combating Desertification)
HCP	Haut Commissariat au Plan (High Commission for Planning)
ICCA	Indigenous and Community Conserved Area
IMF	International Monetary Fund
IUCN	International Union for Conservation of Nature
LQ	Location quotient
MAB	Man and the Biosphere Program
MCP	Multi-comparison procedure
MTA	Ministère du Tourisme et de l'Artisanat (Ministry for Tourism and handicraft)
OECD	Organisation for Economic Co-operation and Development
PRI	Partido Revolucionario Institucional (Institutional Revolutionary Party)
RSPB	British Royal Society for the Protection of Birds
SIOT	Symmetrical input-output table
SKBR	Sian Ka'an Biosphere Reserve
SMNP	Souss-Massa National Park
SPTD	State-Planned Tourism Destination
SUTs	Supply and use tables
TALC	Tourist Area Life Cycle
TIES	The International Ecotourism Society
UN	United Nations
UNEP	United Nations Environment Programme
UNEP-WCMC	United Nations Environment Programme – World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNF	United Nations Foundation
UNTWO	World Tourism Organization

USAID	United States Agency for International Development
WCED	World Commission on Environment and Development
WCS	World Conservation Strategy
WWF	World Wide Fund for Nature
WWII	World War II

Note: Maps in this dissertation include internationally disputed boundaries and do not reflect any edorsement of specific parties or positions in political conflicts by the author.

Summary

Nature-based tourism and ecotourism experienced a dynamic development over the past decade. While originally often described as specialized post-Fordist niche markets for ecologically aware and affluent target groups, in many regions they are nowadays characterized by a heterogeneous structure and the presence of a wide product range, from individual travels to package tours.

The present dissertation analyzes the structure and economic importance of tourism in two highly frequented protected areas in middle income countries, the Sian Ka'an Biosphere Reserve (SKBR) in Mexico and the Souss-Massa National Park (SMNP) in Morocco. Both areas are situated in close proximity to the most important package tour destinations Cancún (Mexico) and Agadir (Morocco) and are subject to high touristic use and development pressure. So far, the planning of a more sustainable tourism development is hampered by the lack of reliable data.

Based on demand-side surveys and income multipliers calculated with the help of regionalized input-output models, the visitor structure and economic impact of tourism in both protected areas are described. With regional income effects of approximately 1 million USD (SKBR) and approximately 1.9 million USD (SMNP), and resulting income equivalents of 1,348 and 5,218 persons, both the SKBR and the SMNP play an important—and often undervalued—role for the regional economies in underdeveloped rural peripheral regions of the countries.

Detailed analyses of the visitor structures show marked differences with regard to criteria such as travel organization, nature/protected area affinity and expenditures. With regard to planning and marketing of nature-based tourism, protected area managers and political decision-takers are advised to focus on ecologically and economically attractive visitor groups. Based on the results of the two case studies as well as existing tourism typologies from the literature, a classification scheme is presented that may be used for a more target-oriented development and marketing of nature-based tourism products.

Zusammenfassung

Natur- und Ökotourismus haben in den vergangenen Jahrzehnten eine dynamische Entwicklung durchlaufen. Einstmals häufig als spezialisierte postfordistische Nischenmärkte für ökologisch interessierte und zahlungskräftige Zielgruppen bezeichnet, sind sie heute in vielen Regionen durch eine heterogene Struktur und das Vorhandensein einer breiten Angebotspalette von Individualreisen bis hin zu Pauschalangeboten gekennzeichnet.

Die vorliegende Arbeit befasst sich mit der Struktur und wirtschaftlichen Bedeutung des Tourismus in zwei stark touristisch frequentierten Schutzgebieten in Entwicklungs- bzw. Schwellenländern, dem Biosphärenreservat Sian Ka'an (SKBR) in Mexiko sowie des Souss-Massa Nationalpark (SMNP) in Marokko. Beide Gebiete liegen in unmittelbarer Nähe zu den wichtigsten Pauschalreisezielen Cancún (Mexiko) und Agadir (Marokko), und unterliegen einem hohen touristischen Nutzungs- und Entwicklungsdruck. Die Planung einer nachhaltigen Tourismusentwicklung in den Untersuchungsregionen wird bislang durch das Fehlen verlässlicher Daten erschwert.

Basierend auf nachfrageseitigen Primärdatenerhebungen und mittels regionalisierter Input-Output-Modelle berechneter Einkommensmultiplikatoren werden die Besucherstruktur und ökonomische Bedeutung des Tourismus in beiden Schutzgebieten dargestellt. Mit regionalen Einkommenswirkungen in Höhe von ca. 1 Million USD (SKBR) bzw. ca. 1,9 Millionen USD (SMNP) und daraus abgeleiteten Einkommensäquivalenten von 1.348 bzw. 5.218 Personen, spielen sowohl das SKBR als auch der SMNP eine wichtige—und oftmals unterschätzte—Rolle für die regionale Wirtschaft in relativ strukturschwachen ländlichen peripheren Regionen der Staaten.

Detaillierte Analysen der Besucherstruktur zeigen deutliche Unterschiede im Hinblick auf Kriterien wie Reiseorganisation, Natur- und Schutzgebietsaffinität und Ausgabeverhalten. Schutzgebietsmanagern und politische Entscheidungsträgern wird empfohlen, sich bei der Planung und Vermarktung des Schutzgebietstourismus stärker auf sowohl ökologisch als auch regionalwirtschaftlich attraktive Besuchergruppen zu konzentrieren. Basierend auf den Ergebnissen der beiden Fallstudien sowie existierenden Typisierungen aus der Literatur, wird ein Klassifizierungsschema zur gezielteren Entwicklung und Vermarktung von Naturtourismusprodukten vorgestellt.

"When we told our guide that we didn't want to go to all the tourist places, he took us instead to the places where they take tourists who say that they don't want to go to tourist places. These places are, of course, full of tourists."
Douglas Adams (1990), *Last Chance To See*

1 Introduction

1.1 On tourists, bubbles and protected areas

German author and poet Hans Magnus Enzensberger (1958), an early critic of (mass) tourism, suggested that Western tourists tend to travel essentially for one reason: to briefly escape the social reality and living conditions of their industrialized cities. However, against the backdrop of the rise of mass travel in the late 1950s, he further argued that such attempts to escape were in vain, as tourism itself had become a commoditized product: "The liberation from the industrialized world has itself established as an industry[1]" (Enzensberger, 1958: 713; my translation). As one outcome of such commoditization of travel, Western mass tourists are often said to stay within imaginary boundaries of a "tourist bubble" of their own native culture (Carrier and Macleod, 2005; Cohen, 1972: 166-167; Jacobsen, 2003: 72). They are thus excluded from important parts of their destinations that are commonly viewed as indigenous, exotic, authentic and natural, such as encounters with local people, culture and untouched landscapes. The concept of a tourist bubble usually refers to travelers' movement patterns and perceptions of their environment. Furthermore, as Jaakson (2004) points out, tourist bubbles tend to be delimited in space. In this dissertation, a tourist bubble is understood as a highly developed tourist space in otherwise peripheral regions, planned and managed according to Western standards (Edensor, 2001: 63).

In the 1980s, the notion of alternative tourism became fashionable, first among higher educated classes attempting to avoid, not to say "escape" the "large numbers, tasteless and ubiquitous development, environmental and social alienation and homogenization" commonly associated with mass tourism (Butler, 1990: 40). Instead of artificial overcrowded resorts, alternative travelers supposedly seek to visit pristine environments and encounter "authentic" exotic cultures. Nature-based tourism in protected areas with scenic landscapes, lush vegetation and abundant wildlife—notably in regions of the Global South that have been so far less influenced by industrialization processes—promises to provide such experiences. Nature-based tourists or ecotourists are motivated by their wish to experience a genuine "contrast to everyday life" (Mehmetoglu, 2007a).

Despite their growing significance, Mowforth and Munt (2009) argue that there is still a lack of research on alternative or "new" forms of tourism, such as nature-based tourism in protected areas:

1 Original in German: "Die Befreiung von der industriellen Welt hat sich selber als Industrie etabliert [...]".

> "(…) There are now many studies of tourism, especially tourism in the Third World, that catalogue and discuss its growth and impacts. In particular, studies have tended to highlight the economic, environmental and socio-cultural impacts of conventional package tourism. Rather than adding to this body of work, we focus particularly on the under-researched "new" forms promoted in the First World (…). Although proportionally small relative to all forms of Third World tourism, the new forms of tourism are significant in terms of both the claims that are made about them and the rate at which they are growing." (Mowforth and Munt, 2009: 1-2)

This dissertation aims to combine several of the issues raised by Mowforth and Munt (2009). It attempts to analyze economic impacts of nature-based tourism in Third World contexts, and to contribute to the conceptual understanding of such under-researched new forms of tourism.

The dissertation assesses nature-based tourism in two coastal protected areas in upper and lower middle income countries. Both the Sian Ka'an Biosphere Reserve (SKBR) on the Caribbean coast of Mexico and the Souss-Massa National Park (SMNP) on the Atlantic coast of Southern Morocco protect important ecosystems and habitats of the respective countries while representing important regional tourism attractions and thus regional economic assets. The two protected areas are situated in close proximity to important beach resorts: Cancún and the Riviera Maya in Mexico, and Agadir in Morocco. Both resort towns mainly cater to mass package tourists and feature typical infrastructure and architecture of mass tourist bubbles.

1.2 Current state of research and research objectives

Although authors such as Mowforth and Munt (2009: 1-2) argue that there is still a general lack of research on new tourism in Third World contexts, it is unquestionable that the attention it received by scholars grew substantially over the past decades, notably with regard to nature-based forms of alternative tourism. Google Scholar, a web search engine for academic texts, indicates a mere 173 publications that mention the term "ecotourism" in the 1980s. The numbers grew to 7,930 in the 1990s and 26,100 between 2000 and 2009 (www.scholar.google.com; accessed 19.02.2013). During the past two decades, the *Journal of Sustainable Tourism* (1993) and the *Journal of Ecotourism* (2002) were founded, and the United Nations (UN) declared 2002 the "International Year of Ecotourism" (Butcher, 2006; Carrier and Macleod, 2005: 315).

It is often claimed that nature-based forms of tourism are the fastest-growing segments in the market, and that tourism and nature protection can benefit mutually from each other, the first generating much needed income and financial support, while the latter provides valuable attractions: "Ecotourism connects travelers seeking to help protected areas with protected areas needing help" (Drumm and Moore, 2005: 18). However, the number of studies on the economic impacts of tourism in protected areas is limited worldwide (Mayer et al., 2010: 74). Research mostly focus-

es on countries such as the USA, Australia or Europe, where nature-based tourism in protected areas has a long tradition. Few studies exist that evaluate regional economic impacts of protected area tourism in detail in developing country contexts (Walpole and Goodwin, 2000: 561).

In both protected areas analyzed in this dissertation, no prior study exists that assesses economic impacts from tourism, and socioeconomic data in general is scarce, to say the least. Only one of them, the SKBR in Mexico, provides estimates of visitor numbers based on own countings, although those can be considered sketchy (cf. Chapter 6.1). However, the availability of socioeconomic data in general and information on the regional economic significance of protected areas in particular is crucial, especially where protected areas lack funding and political decision-takers often favor large-scale tourism development over more environmentally sound approaches (cf. Chapter 4).

The present dissertation thus has, on the one hand, a pilot study character and a background in applied geography. It shall provide protected area managers, tourism businesses, local communities and other regional stakeholders with more detailed data on visitation in their respective protected areas, on the economic impacts related to nature-based tourism and their regional distribution. It draws on a methodology developed and applied within the context of several extensive economic impact assessments of protected areas in Germany (Job et al., 2003; Job et al., 2005a; Job et al., 2009, Job et al., 2013b). Both the German case studies and this dissertation employ a quantitative demand-side survey and the calculation of economic impacts with the help of regional multipliers. However, multipliers for the German case studies were obtained from a private consulting company, while for this dissertation multipliers were calculated with the help of regionalized input-output tables, the most common approach in economic impacts assessment of tourism (Mayer et al., 2010: 74). It is therefore an attempt to apply an approved methodology in broader contexts, relying on available official statistics instead of more cost-intensive data from private providers.

On the other hand, this dissertation aims at contributing to the theoretical understanding of the nature-tourism nexus. It is argued that the traditional boundary between "old" and "new" tourism is increasingly blurred and that drawing clear distinctions between mass and alternative, package and individual etc. would mean to oversimplify a more complex system of linkages and interdependencies on organizational as well as spatial levels. Different "types and forms" (Uriely et al., 2002) of tourism overlap in both time and space, notably in regions where nature-based attractions are easily accessible for very different types of visitors.

More concretely, the dissertation aims to answer the following research questions:

1. What are the visitor numbers and structures with regard to expenditures, travel motivations and spatial behavior in the SKBR and the SMNP?
2. What are the size, structure and regional distribution of economic impacts generated through tourism in both case study areas?

3. How does the vicinity to highly developed tourist spaces, tourist bubbles characterized by large-scale infrastructure, and high numbers of tourist arrivals influence the visitor structure and economic effects in both protected areas?
4. How may the complex tourism structures in such protected areas be captured in a conceptual model?

1.3 Outline of the dissertation

Following this introduction, Chapter 2 assesses major developments of tourism since World War II (WWII). Focusing on of the tourism industry at large, the Fordist/post-Fordist dialectic provides a conceptual framework to describe global development tendencies, such as the growing importance of post-Fordist and neo-Fordist niche markets during the past decades. Tourism typologies that attempt to capture this increasing complexity are also presented in Chapter 2. Finally, suitable geographical models to describe the spatiotemporal tourism development in both case study areas are presented and discussed in the last section of Chapter 2.

After having identified nature-based forms of tourism as one of the fastest-growing new tourism niche markets, Chapter 3 explores its relationships with the concept of sustainable development, which itself emerged as a policy paradigm since the 1980s, and how sustainable development's twin objectives of conservation and economic development are related to protected areas as tourism venues. Chapter 3 further presents the concepts of sustainable tourism, nature-based tourism and ecotourism and their typical presentation as post-Fordist or neo-Fordist niche markets, as well as a discussion of the development of their relationship to Fordist mass tourism under the backdrop of both diversification and mainstreaming tendencies.

In Chapter 4, the regional settings of the SKBR and the SMNP are presented. Given the pilot study character of the dissertation, the structure and evolution of the regional tourism systems in general and the two protected areas in particular are discussed in detail in relation to the concepts described in Chapters 2 and 3. The discussion focuses on exploring structural differences and similarities between both case studies, so as to identify potential for drawing generalized conclusions.

Chapter 5 describes the methodology applied in the study to estimate economic impacts of different types of tourists. First, different approaches for measuring economic impacts and their respective advantages are discussed, and the method employed in this dissertation is presented and justified. Subsequently, the concrete case study design in terms of data collection and analyses is outlined.

Chapters 6 and 7 follow a parallel structure and describe the findings for both case study areas. First, visitor numbers and structures are described, followed by a discussion of visitor motivations, notably the importance attached to nature and nature protection, so as to distinguish visitors with high and low affinity toward nature and protected areas. In a third step, expenditures of protected area visitors are assessed in detail, and different methods of visitor segmentation applied, following

segmentation criteria from the literature presented in Chapters 2 and 3, so as to identify differences in spending and spatial behavior between relevant groups. Then, based on methods presented in Chapter 5, the economic impacts of tourism in both protected areas are calculated. The relative economic importance of different visitor groups is discussed, as well as the contribution of nature-based tourism in relation to the total regional economy.

Chapter 8 contains the conclusions drawn from the theoretical discussions and the findings of the empirical case studies. A conceptual model is presented that aims to help researchers and practitioners to better understand the complex tourist structures in protected areas under the influence of Fordist as well as post-Fordist and neo-Fordist patterns of regional tourism systems.

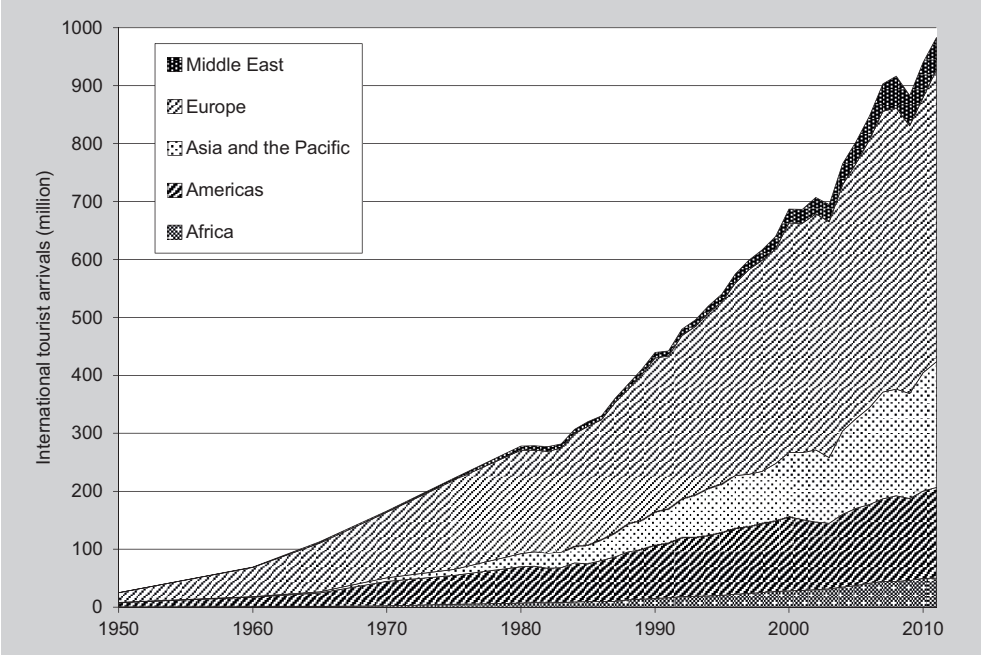
2 Tourism development from conceptual perspectives

2.1 The Fordist/post-Fordist dialectic

2.1.1 Fordist modes of production and consumption in tourism

Since the end of WWII, and even more so since the 1950s, a worldwide boom in tourism has been observed. According to data of the World Tourism Organization (UNWTO), the number of international tourist arrivals rose from 25 million in 1950 to 983 million in 2011, as shown in Figure 2-1[2].

Figure 2-1: International tourist arrivals 1950-2011 (million)



Source: UNWTO (2006; 2010; 2012)

2 Some authors such as Mowforth & Munt (2009: 378-379) question the accuracy of the UNWTO's statistics, relying on own experiences and other sources. They quote Pleumarom (2001) who criticizes the UNWTO for exercising its power "through its pervasive control over data collection, economic impact studies and market research in the field of tourism". She argues that "independent statistics experts" have noted a tendency in UNWTO's statistics to exaggerate the (economic) importance of the industry "to hoodwink everyone about the supposed benefits of tourism".
Without taking this discussion too far—Wheeller (2004: 474) rightly points out that "independent" researchers also "have their own agenda"—I would simply suggest to interpret any statistics, particularly in tourism, with caution: "Don't believe everything you are told. But believe you are not told everything" (Wheeller, 2004: 474).

Tourism—besides all definitional difficulties, sometimes blurry delimitation to other sectors of the economy and occasionally problematic base data—is described as the largest item in international trade of services in the world (UNWTO, 2008). In 2003, international tourism accounted for 6% of all exports of goods and services, or nearly 30% of all service exports worldwide (UNWTO, 2005).

The massive growth of tourism since the 1950s was to a great extent driven by selling highly standardized, inflexible package tours to a large number of customers. Hence, it can be described as applying Fordist modes of production and consumption to tourism. The term *Fordism* is derived from Henry Ford, who established assembly line production in the automobile industry and the mass production of highly standardized goods (Ioannides and Debbage, 1998: 101). However, parts of the tourism industry are still characterized by a small-scale and in some respects pre-Fordist business structure. Examples include parts of the hotel industry, small restaurants, craftshops, and many others. Nevertheless, global developments are dominated by a small number of companies with high market power. The increasing concentration of market shares in the hands of a few main actors leads to oligopolistic industry structures in many areas, like airlines, transnational hotel chains, cruise lines or package tour operators (Ioannides and Debbage, 1998: 110-111).

The German tour operator market, for instance, is dominated by three companies (TUI, Thomas Cook, REWE-Touristik) which account for almost 50% of the total business volume (Deutscher ReiseVerband [DRV], 2009). Market power and control lie in the hands of the suppliers and not on the demand side, which is another characteristic feature of Fordist market structures (Urry, 2003: 14).

Highly standardized and institutionalized package tours represent the most typical product of the Fordist tourism industry. Relatively low profit margins oblige tour operators to rely on economies of scale, which are, in turn, a result of the oligopolistic market structure described above. Economies of scale enable tour operators to sell package tours to bargain prices to a large number of costumers (Torres, 2002: 89). Hence, during the postwar Fordist era, travel and tourism eventually became accessible for the middle and working class. The Germans' holiday travel propensity[3], for instance, rose from 49.0% in 1972 to 76.2% in 2008 (Forschungsgemeinschaft Urlaub und Reisen [FUR], 2009: 2). Interestingly, as Job (2003: 363) points out, Fordist tourism not only adopted production characteristics from manufacturing, but the development of Fordist industrialized societies itself provided technological innovations like railways, steam boats or coaches (and subsequently affordable air travel), that were essential for the rise of the package tour.

Typical Fordist package tours are promoted as "placeless holiday types" such as skiing vacations or beach trips, the latter often referred to as *3S* ("sun, sand, sea"). Resorts are defined by common features in terms of recreational value and presented as independent of specific countries or cultures and unattached to local contexts (Goodall and Bergsma, 1990: 173). Consequently, price often remains as nearly the only competitive advantage for tour companies (Shaw and Williams, 2002: 132).

3 The holiday travel propensity indicates the share of the population that goes on at least one vacation trip of five days or more per year.

To minimize risk, big tour operators have a variety of substitute destinations on offer (Ioannides, 1998: 143). Single resorts become interchangeably and possess a remarkable resemblance with reference to architecture, infrastructure or entertainment. Edensor (2001: 63-64) talks about "enclavic tourist spaces" or "environmental bubbles" that are "carefully planned and managed to provide specific standards of cleanliness, service, décor and "ambience"'. The tourist bubble is separated from the rest of the city, e.g. the residential areas of local workforce, and its potentially unpleasant influences, like crime, poverty or derelict buildings (Judd, 1999: 36).

Destinations like Cancún and the adjacent Riviera Maya in Mexico, or Agadir in Morocco, comply with the Fordist scheme in many ways. They are designed for mass tourism and, as mentioned above, feature high degrees of standardization with regard to infrastructure, architecture, entertainment or food. Furthermore, they are mainly visited by package tourists (Arnegger, 2010: 238; Torres, 2002: 106).

Harvey (1992: 135) points out that not only is the mass production of standardized goods and services a distinctive feature of Fordism, but so is mass consumption. For Fordist mass tourism, this implicates the presence of a large number of customers who are generally described as an undifferentiated clientele (Poon, 1993: 32). Urry (2003: 139), in his seminal work *The Tourist Gaze,* describes mass tourists as part of a "collective gaze" who are guided to certain objects and sites by "signposts." Signposts therefore identify a limited number of places where, consequently, a large number of mass tourists congregate (Urry, 1995: 138). This aspect even represents an essential feature of the experience at mass tourism destinations: "They would look strange if they were empty" (Urry, 1995: 138). Within the "safe" environment of the tourist bubble typical elements deemed typical of local culture are on display, tailored to Western mass tourist consumption in a way that MacCannell (1973) describes as "staged authenticity." Examples include "airport art" (Graburn, 1967: 33), i.e. souvenir products imitating traditional material culture, or "exotic" rituals staged as "pseudo-events" for tourists (Boorstin, 1964; Shaw and Williams, 2002: 106). Other examples are historic cities that become "living museums," or the adaptation of unfamiliar food to western taste (Cohen, 1972: 170-171). Culture, people, places, sights, customs and settings are customized and commercialized to satisfy mass tourism demand (Britton, 1991: 454). Moreover, Cohen (1988: 379-380) points out that, in the course of time, cultural artifacts once designed for tourism marketing purposes might even become recognized as identity-generating by local people.

2.1.2 The transition to post-Fordism in the tourism sector

During the 1970s and 1980s, various authors observed a "Fordism crisis" (Bathelt and Glückler, 2002: 257) and, as a consequence, a paradigm shift in the production philosophy (Bathelt and Glückler, 2002: 257-258; Harvey, 1992: 155-156; Storper and Walker, 1989). Bathelt and Glückler (2002: 257), for instance, outline the growing difficulties for large companies with rigid, Fordist modes of production to cope with Globalization and increasingly differentiated and fast changing consumer behavior. They also describe emerging limits of Fordist developments—in technical and

economical as well as social and ecological perspectives. This holds especially true for the industrial sector, but can also be transferred to other domains of capitalist societies.

Consequently, a transition from Fordism to post-Fordism and flexible specialization has been described in particular since the end of the 1980s. Companies acquire new, more flexible modes of production and focus on economies of scope instead of economies of scale (Nilsson and Gotmark, 1992: 230). Cost advantages are hence not associated with large-scale production of standardized goods and services but with a diversified product range produced in small batches. "Flexible accumulation," as Harvey (1992: 147-150) puts it, also applies to the global financial system, changing patterns of consumption or labor processes and the labor market, where outsourcing, sub-contracting, part-time or temporary work have become common instruments.

Emanating from industial processes such tendencies have been applied to the service sector in general and to tourism in particular:

> "It would appear that just as Butlins holiday camps or packaged holidays are indicative of services mass-produced and consumed under a regime of Fordism, the emergence of small group tours to Bolivia or truck journeys across sub-Saharan Africa is indicative of post-Fordism" (Mowforth and Munt, 2009: 22).

As this quotation indicates, numerous niche markets emerged in answer to changing consumer tastes. At the same time, more flexible ownership structures like management contracts or franchising instead of direct ownership (of property, for instance) have been established. The tendency toward flexible labor markets is also evident in the tourism industry, where a small group of highly skilled and well-paid employees with long-term contracts, usually in higher management positions, is juxtaposed with a large number of low-skilled, low-wage laborers with much less job security, who are hired and laid off according to prevailing market conditions (Ioannides and Debbage, 1998: 106).

Just as a tendency toward flexible specialization on the supply side has been observed, consumers are also changing—a process that often precedes a shift in the production process. Customers of Fordist tourism products—e.g. highly standardized, mass-produced package tours—are generally described as an inexperienced and predictable target group whose travel decisions are mainly based on a few motives like "sun and sand" and, most importantly, bargain prices. In turn, post-Fordist tourists are characterized as experienced, independent and flexible "sun-plus travelers" with much more sophisticated demands (Ioannides and Debbage, 1998: 105). Consequently, some authors point out that undifferentiated mass tourism products that perceive all costumers as similar have lost popularity (Lash and Urry, 1994: 273). This explains the emerging post-Fordist tourism niches, which Poon (1993: 17) refers to as "new tourism"—the binary opposite to "old tourism." Such niche markets include ecotourism and nature-based tourism (a distinction that is further discussed in Chapter 3.1.3), adventure tourism (Weber, 2001), ethnic tourism (van den Berghe, 1995), historic tourism and heritage tourism (Mowforth and Munt, 2009: 276-283)

or "danger tourism" (Mowforth and Munt, 2009: 140), to name a few. According to various sources, ecotourism is the fastest growing and hence most important of these niche markets (e.g. Hawkins and Lamoureux, 2001: 66-67; The International Ecotourism Society [TIES], 1991); however, since definitions vary considerably, statements on the quantitative importance of ecotourism are somewhat difficult to interpret (Mowforth and Munt, 2009: 96). I will return to this point in Chapter 3.1.3. This diversity, together with increased levels of experience, supposedly provides customers with a much better market position than under the producer-dominated Fordist regime (Torres, 2002: 92).

Fast and significantly changing characteristics of tourism consumption, identified as a sign of post-Fordist influences, can also be interpreted in a postmodern context (Mowforth and Munt, 2009: 25). According to Urry (2003: 74), these transformations cannot be examined without taking into account further-reaching structural and cultural development within current societies. Harvey remarks:

> "Flexible accumulation has been accompanied on the consumption side, therefore, by a much greater attention to quick-changing fashions and the mobilization of all the artifices of need inducement and cultural transformation that this implies. The relatively stable aesthetic of Fordist modernism has given way to all the ferment, instability, and fleeting qualities of a postmodernist aesthetic that celebrates difference, ephemerality, spectacle, fashion, and the commodification of cultural forms" (Harvey, 1992: 156).

Formerly rigid boundaries between cultural forms like tourism, arts, education, television, sports or architecture dissolve or become blurred (Urry, 2003: 74).

In contrast to the mass tourist's collective gaze, post-Fordist tourists are supposedly searching for a "romantic gaze," which attaches high importance to values like solitude, privacy or a personal relationship to the attractions which are gazed upon (Urry, 2003: 43). Hence, one might conclude that post-Fordist tourists are searching for true authenticity outside the tourist bubble—or at least claim not to get fooled by its staged authenticity or pseudo-events.

2.1.3 Post-Fordism, Neo-Fordism and McDonaldization: the tourism industry polyglot

Changes and transitions in tourism and elsewhere, from the rigidity of the Fordist economic regime toward more flexible forms of production, labor organization and consumption patterns, are in many cases easily observable and evident. It seems problematic, however, to describe post-Fordist tourism production and consumption merely as "fundamentally different" (Poon, 1993: 9) and as antipode to "older" forms. These alleged oversimplifications have caused criticism also within the wider context of post-Fordist theoretical approaches. Yeung (1994: 465), for instance, challenges analyses that assume mutual exclusivity between Fordism and post-Fordism by choosing either the first or the latter, and criticizes them for not recognizing "the intermeshing of different production systems in both time and space." While

Yeung's statement is made with reference to literature concerning the organization of businesses in general, it holds true for research about the travel industry in particular.

Consequently, many authors agree that this shift cannot be interpreted as an essentially chronological sequence of development stages (Ioannides and Debbage, 1998: 107; Ritzer and Liska, 1997: 98; Shaw and Williams, 2002: 179-180). Ioannides & Debbage (1998: 108), for instance, describe today's tourism industry as a "polyglot of coexisting multiple incarnations […] displaying varying traits of flexibility." Hence, this "amorphous" sector is influenced by blurry boundaries and a multitude of linkages to other fields of economy and society, and characterized by the coexistence of pre-Fordist as well as Fordist or post-Fordist structures. It appears these characteristics deserve some closer examination.

A substantial part of the travel industry has long been and still is characterized by a pre-Fordist organization, e.g. the many family-run and small or medium-sized businesses like small hotels, restaurants or souvenir shops. Those businesses have never possessed the financial resources, skills and/or manpower to engage in Fordist mass production. It would be misleading, on the other hand, to associate them generally with post-Fordist niche markets, simply because they often cater to certain market segments, e.g. budget travelers, on a small-scale basis which often involve higher degrees of individuality. Ioannides & Debbage (1998: 106-108) also emphasize this pre-Fordist sector's traits in terms of flexibility. Both numerical and functional labor flexibility, for instance, have been applied in the travel industry for a long time and can therefore "hardly be considered innovative practices" (Ioannides and Debbage, 1998: 106). For example, the permanent staff of many small owner-operated hotels is responsible for a variety of different tasks (*functional flexibility*). According to the seasonality at a specific destination, this core group is often supported by a variable number (*numerical flexibility*) of unskilled part-time or temporary "peripheral employees" (Shaw and Williams, 2002: 176). The concept of core and peripheral workers, developed by Atkinson (1984) to describe tendencies in labor organization in manufacturing, seems to suit the specific conditions in travel and tourism labor markets. Because of the importance of seasonality to many tourism markets, the temporal fluctuations in demand can vary considerably between seasons, weekdays and weekends/public holidays, and even between different times of day; one might think of a country inn catering to day trippers at lunch, as opposed to downtown restaurants which mainly serve dinner (Shaw and Williams, 2002: 174).

On the other hand, large parts of the travel industry can still be characterized as essentially Fordist in nature (cf. the examples of airlines, transnational hotel chains or tour operators described in Chapter 2.1.1). Ritzer & Liska (1997), for instance, contest Urry's (2003: 15) notion of the downturn of packaged tourism products. With reference to Ritzer's (1983; 1998) concept of the "McDonaldization" of society[4], they state that today's travel products are more flexible than their predecessors described

4 Ritzer (1983; 1998) uses the term "McDonaldization" to describe an ever more efficient, calculabe, predictable world increasingly controlled by technology. According to Ritzer, *McDonald's*, the global fastfood franchise, stands as a symbol for the rationality of society in general.

by Urry, but nevertheless package tours did not disappear and are still largely "McDonaldized." Many customers still want vacations that are predictable, efficient, calculable and controlled. With reference to tourism they speak of "McDisneyization," since the basic features of McDonaldization of society at large are embodied in the travel industry explicitly in the theme parks of the Walt Disney Corporation. Ritzer & Liska (1997: 98) also state that the growing number of tailor-made and flexible travel arrangements described by various authors can be seen partly as a result of the McDonaldization of societies on a global scale. Tour operators, for instance, may not see a need to include standardized meals in their packages, since tourists can be sure to find their favorite restaurant franchises at their resort—not least a McDonald's restaurant.

While characteristics like flexibility or individuality as such in the tourism industry are older than the theoretical concept of post-Fordism, as pointed out above, some authors also suggest that new developments (e.g. emerging niche markets) are often organized in a rather Fordist way. For instance, a substantial proportion of the global market for nature-based tourism consists of "mass ecotourists" who visit easily accessible protected areas as an add-on to *3S* package tours (Carrier and Macleod, 2005: 318; Weaver, 2001b: 106). Although highly visible in many of the world's protected areas, post-Fordist niche markets like nature-based tourism were and still are often referred to as "alternative" forms of travel and therefore as being opposed to the large-scale production and consumption inherent to mass tourism. Oppermann (1993: 542), for instance, suggests that destinations are catering exclusively either to mass tourism or alternative tourism, thereby applying this opposition to a spatial scale.

However, such dichotomous views of the tourism system have been increasingly called into question in recent years. This seems to be conform with general critics of post-Fordist theorists who, apparently, fail to recognize that Fordist products can become highly specialized and flexible while still relying on mass production (Torres, 2002: 93). Britton (1991: 453) highlights the travel industry's ability to "disguise" the industrialization and mass production of such products through "niche marketing, cosmetic design variations, and advertising." Therefore, Ioannides and Debbage (1998: 100, 122), with reference to Dunford and Benko (1991: 302-305), talk about "neo-Fordism" rather than post-Fordism, a term that refers to the large-scale character of many "new" tourism products.

In this respect, tourism manifests itself as a multi-layered phenomenon that cannot be easily applied to one single conception such as post-Fordism, for instance. While more and more fast-changing trends and niche markets develop, some of the Fordist aspects consolidate. It should be noted that all manifestations of the Fordist spectrum—pre-Fordism, Fordism, post-, and neo-Fordism—exist contemporaneously and are not mutually exclusive. Also, supposedly post-Fordist niche markets, like nature-based tourism, eventually developed their own packages.

On the consumer side, the term of "hybrid costumers" or tourists with fast-changing and heterogeneous consumer patterns can be mentioned (Chambers, 2007: 240). It is not unusual in this regard that tourists participate in, say, a high priced eco-jungle-trek in Costa Rica, or the "truck journey through sub-Saharan Africa" men-

tioned above as their main vacation trip, but also book one-week bargain packages to all-inclusive resorts at other times of the year.

2.1.4 Tourism typologies[5]

It is no wonder that the increasing multiplicity of tourism experiences has inspired various scholars to develop typologies that take into account these pluralistic patterns instead of portraying tourists as a homogenous group (e.g. Hamilton-Smith, 1987; Mo et al., 1993; Pearce, 1982). Cohen (1972; 1979) was one of the first authors to subdivide travelers into different categories. He explicitly criticizes the earlier works of other scholars who consider *all* tourists as either interested only in superficial pleasures (e.g. Boorstin, 1964) or as seeking real authenticity (e.g. MacCannell, 1973). According to Cohen's conceptual descriptions, tourists can be classified according to the degree of institutionalization of travel patterns, distinguishing the drifter, the explorer, the individual mass tourist and the organized mass tourist (Cohen, 1972: 167-168). Drifters and explorers travel independently, seeking to leave the boundaries and constraints of the tourist bubble. While drifters follow no fixed itinerary or timetable and try to immerse fully in the culture of the host, explorers tend to value some basic Western comforts such as quality accommodation and transport, and make sure they can return to familiar environments of their own culture when they deem it necessary (Cohen, 1972, p. 168). Individual and institutional mass tourists, by contrast, rely on travel arrangements provided by professional agents—exclusively so in the case of institutional mass tourists. They rarely, if ever, leave the tourist bubble, epitomized in air-conditioned tour buses and rigid itineraries.

A second tourist classification by Cohen (1979) draws on motivations for traveling, ranging from the search for pure pleasure ("recreational" and "diversionary" modes) at one end of the continuum, through to the quest for profound meanings ("experiental," "experimental" and "existential" modes) at the other (Cohen, 1979: 183-193). The behavior of tourists during their travels is therefore determined by the orientation toward a spiritual or cultural center, which can be located either within or outside the traveler's own society. Recreational tourists travel to recover their physical and mental strengths, to return to their society where their center lies and to go on with the daily routine. Diversionary tourists also see tourism merely as entertainment, but their reason for traveling is to escape the boredom and meaninglessness of everyday life rather than to recover and then continue that routine. Therefore, they are not bound to any center, nor are they looking for one. This distinguishes them from experimental tourists, who also have lost connections to the center of their own society but are trying to find meaning in the cultures of others. However, while interacting with other cultures they always stay aware of their "otherness." The experimental tourists' degree of experience of foreign cultures is even higher as they not only observe but also take part in the other culture's ways of life in

5 This chapter is a slightly modified version of a section from a published scientific paper, of which the author of this dissertation was the main contributor (Arnegger et al., 2010).

search for a center, e.g. by experiencing life in an Indian ashram or an Israeli kibbutz. Nevertheless, experimental tourists tend to be disappointed with any culture they study, and can therefore be described as being on a continuous search for authenticity. Finally, existential tourists are fully committed to a center outside their home society. For practical or financial reasons, they might not relocate permanently but visit the elective center (e.g. a kibbutz) as often as possible (Cohen, 1979: 183-193).

Cohen's typologies have served as a starting point for numerous conceptual redefinitions and/or empirical testing (Hamilton-Smith, 1987; Mo et al., 1993; Pearce, 1982; Yannakis and Gibson, 1992). Hamilton-Smith (1987: 336-341), for instance, distinguishes four extreme types of tourism within a two-dimensional framework according to the degree to which tourist behavior is considered rewarding both by the individual and by society as a whole. However, the author admits that, like all conceptual models, his four-cell diagram is a "simplification" of "the immense complexity of reality" (Hamilton-Smith, 1987: 341), and that in fact "any given segment of human behavior may fall anywhere within the total field" (Hamilton-Smith, 1987: 336) Yannakis and Gibson (1992: 291), in one of the first an attempts to empirically test conceptual models by Cohen (1972) and other authors, added ten more tourist types to the original four (sun lover, action seeker, anthropologist, archeologist, thrill seeker, jetsetter, seeker, high-class tourist, escapist, and sport lover, in addition to Cohen's drifter, explorer and individual and organized mass tourists).

In recent years, some studies have taken this tendency even further by subdividing single categories within existing typologies into "micro-types" (Wickens, 2002: 849). Wickens demonstrates that individual vacationers at a Greek resort who all fall into Cohen's individual mass tourist category are highly diverse with respect to their travel behavior and motivations. Similarly, studies on backpackers, who can all be considered drifters or explorers in Cohen's (1972: 168) sense, revealed a striking diversity of individual tourist experiences (Brenner and Fricke, 2007; Uriely et al., 2002). A study among Israeli backpackers showed that individual multi-type (Uriely et al., 2002: 527) tourists might adopt different modes of tourist experiences across their "touristic biography" as well as even during one trip, an issue already mentioned in Cohen's (1979: 192) earlier work. The phenomenon is also addressed by Pearce (1988), who points out that individuals might follow a "travel career" pattern that is related to Maslow's (1954) analysis of needs.

The attempts of incorporating multi-type tourists into conceptual frameworks as well as subdividing and de-constructing existing tourist typologies can be interpreted within the context of postmodernist theorizing and a general shift from modernist, sharply defined and contradictory academic discourse toward relativity, de-construction and subjective negotiation of meaning (Uriely, 2005: 200-201). While undoubtedly representing another step toward a more realistic representation of the complexity of tourism, it also carries the inherent risk of failing to capture the essence of the investigated phenomenon by focusing entirely on its diversity (Uriely, 2005: 211).

Accordingly, it can be argued that pluralized, less conclusive, de-constructed postmodernist typologies might be of somewhat limited value in terms of management recommendations. This is probably the reason why tourism classifications

written from a managerial point of view tend to highlight defined boundaries over diversity and pluralism. Such market-segmentation-oriented typologies therefore often focus on quantifiable variables like tourist expenditures (e.g. Mok and Iverson, 2000) or the country of origin (e.g. Juaneda and Sastre, 1999). When intangible variables like visitor motivation or tourists' value orientation are used for segmentation, they are usually made quantifiable through the use of Likert scales or other survey methods (e.g. Beh and Bruyere, 2007; Park and Yoon, 2009; Thrane, 1997; Zografos and Allcroft, 2007).

Tourist typologies in terms of market segmentations can also be expected to adopt a more supply-side-oriented approach. Pearce (2008: 156-157), for instance, as part of a model of tourism distribution, segments international leisure tourists according to the way they purchase their travel arrangements. He distinguishes between "package," "independent" and "customized tourists." Package tourists generally purchase one all-inclusive tour whose highly standardized components have been bundled together, promoted and sold by one tour operator. Independent tourists, on the other hand, prefer to travel in a spontaneous and flexible way, and thus tend to purchase travel-related services on-site without intermediaries. Customized tourists, as package tourists, rely on bundled services purchased prior to departure, but also demand tailor-made travel arrangements with features that are normally not included in standard packages.

Like all conceptual models, typologies in tourism have to deal with the problem of finding a balance between a necessary simplification of a (supposedly increasingly) complex reality and the aim of presenting the latter in a comprehensive and structured form. While there is a tendency among theoretical concepts for tourist typologies to stress diversity and pluralism, the more quantitative approaches of most management-oriented classifications might suggest that de-constructed typologies possess only limited practical relevance. On the other hand, management-oriented market segmentations tend to be valid only for a case study with its specific data, but not suitable for generalization (Lowyck et al., 1992: 26).

The apparent gap between more theoretical on the one hand and managerial-oriented categorizations on the other can be related to the distinction between "types" and "forms" of tourism as suggested by Uriely et al. (2002). While types describe intangible "psychological attributes," e.g. travel motivations, forms refer to "visible institutional arrangements and practices by which tourists organize their journey" (Uriely et al., 2002: 521).

Altogether, given the complex characteristics of multi-type tourists or hybrid customers, it seems to be a difficult, if not impossible, task to develop a classification that covers all possible types of travelers (including their dynamics) while still collapsing them into rigid categories. This holds true for tourist subtypes, e.g. from the "alternative" segment, like backpackers (Uriely et al., 2002) or nature-based tourists, as I aim to point out in Chapter 3.3.

This chapter showed how tourism as a system evolved over the past few decades, and how emerging patterns of post-Fordist and neo-Fordist production and consumption can be related to both increasingly complex and specialized tourist markets and tourist types. As a matter of course, trends and changes in tourism

also entail spatial impacts. Several geographers developed conceptual models as to describe spatiotemporal patterns of tourism development at destinations. Two of these models, both of which are relevant for the case study regions examined in this dissertation, are presented in the next section.

2.2 Approaches describing spatiotemporal patterns of tourism development

2.2.1 Butler's TALC concept

Richard Butler's (1980) concept of a *Tourist Area Life Cycle* (*TALC*) has been widely cited, acclaimed, empirically tested and modified. Since 1980, it has inspired numerous scholars and studies (Butler, 2006a; Johnston, 2001b; Tooman, 1997).

The model is based upon the marketing concept of the product life cycle which describes the development of a product's sales volume through different stages: slow sales rates at the beginning followed by rapid growth, stabilization and eventually decline, when products are replaced by more innovative ones. The same basic asymptotic *S* curve is used by Butler to describe the rise and fall (or recovery) of tourist areas through six stages, whereby the indicator of sales volume of the product life cycle is replaced by the number of tourists at the destination in question. The phases of Butler's (1980: 480) concept can be further related to Cohen's (1972) typology of tourists, distinguishing (with decreasing degrees of individuality) drifters, explorers, individual mass tourists and organized mass tourists (cf. Figure 2-2). The six stages of Butler's model can be summed up as follows:

Exploration stage: Tourists have discovered an area for the first time and the number of visitors is still very low. The visitors in this stage can be characterized as drifters according to Cohen's scheme, who travel with no fixed timetable and itinerary and who organize all their travel arrangements entirely on their own, searching for unspoiled natural and cultural environments. Personal contact between local residents and tourists is high, since the latter have to rely on local facilities due to the absence of any significant tourism infrastructure.

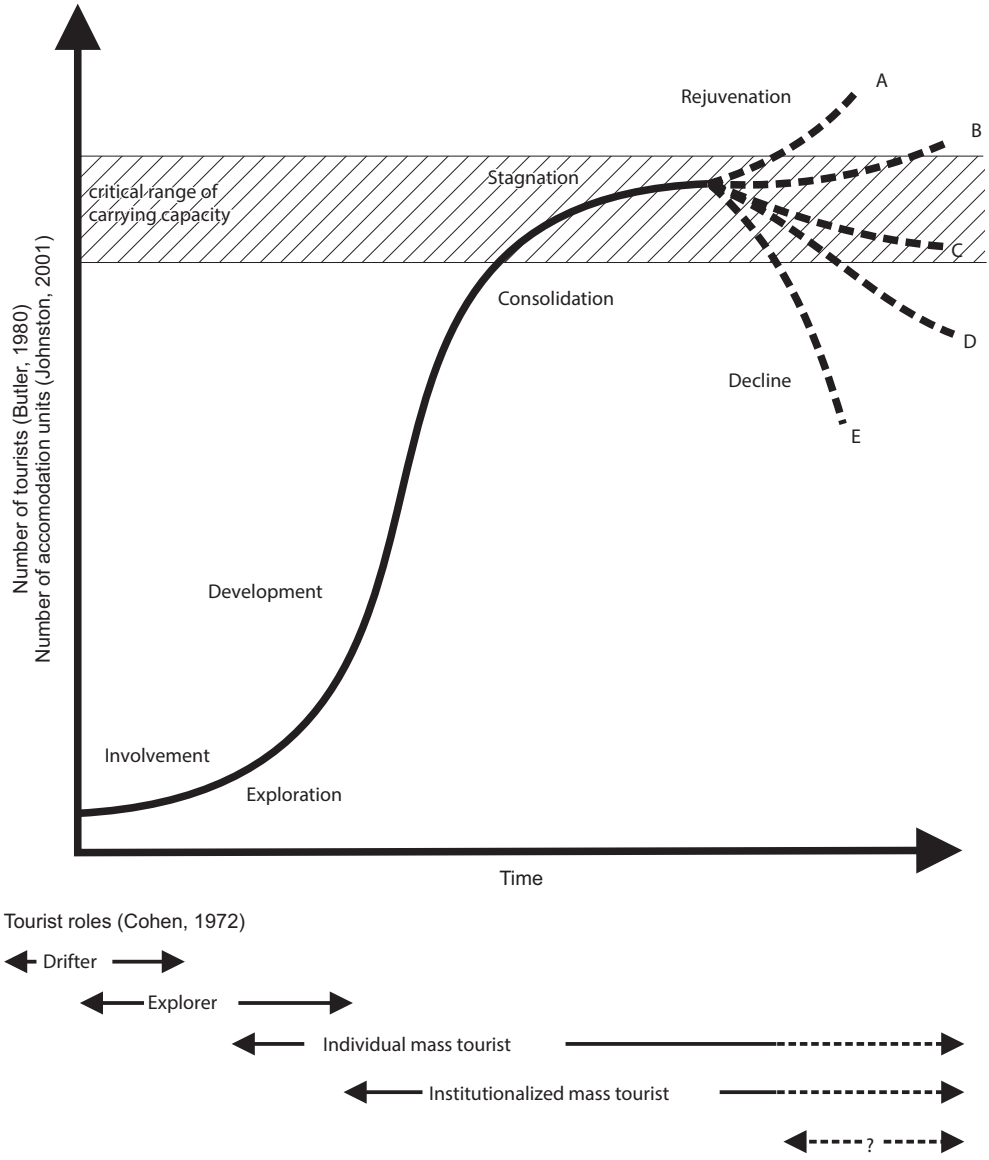
Involvement stage: During this stage, the number of tourist arrivals continues to increase, which leads to the development of small, mostly family-based specific tourism facilities. Contact between visitors and locals remain high, especially for those professionally involved in tourism. In response to the rising importance of tourism authorities might begin to promote the industry, e.g. by improving transportation facilities.

Development stage: The area is now defined and promoted as a tourism destination or resort. The number of visitors increases and can exceed, at least during the high season, the local population. The share of local ownership declines, as external organizations begin to engage in the area.

Consolidation stage: Visitor numbers are still increasing, although at declining

growth rates. The regional economy is largely dependent on tourism, and efforts are made to expand the visitor season and to open new markets. However, as visitor arrivals continue to grow and their total number increases the number of permanent residents, parts of the local population will start to express opposition to visitors and the dominance of tourism-related facilities in the area. In addition, some of the old-

Figure 2-2: Butler's model of a Tourist Area Life Cycle



Sources: Adapted from Butler (1980: 481), Johnston (2001a: 21) and Cohen (1972).

er, locally owned facilities are beginning to have difficulties competing with major transnational companies represented in the area.

Stagnation stage: During this stage, the number of visitors reaches its absolute peak. The area is well known and marketed, but will no longer have an image of exclusivity. Ecological and social problems arise as limits of carrying capacity are reached or exceeded. Surplus bed capacities and a loss of exclusivity lead to decreasing revenues per tourist and force owners to rely on repeat visitors, conventions and bargain packages to maintain the level of visitation. The resort image is becoming increasingly "placeless," as artificial facilities replace natural and genuine cultural attractions. Cohen's organized mass tourist is likely to represent the majority of visitors at this stage.

Decline stage: During the final stage of decline, the area faces a declining market (both spatially and numerically) and is not able to compete with newer destinations. Prices for property fall with the decreasing attractiveness, which leads to high property turnover and higher share of local ownership. Some tourist facilities might be converted into related structures, like second homes or apartments, or even disappear completely.

Rejuvenation stage: Rejuvenation is described by Butler as an alternative scenario to decline in which new attractions are tapped at a destination. These can be either man-made (e.g. gambling casinos in Atlantic City) or previously unexploited natural resources (e.g. European spa towns entering the market for winter sports tourism).

Besides widespread acclaim, Butler's simple and linear model has also caused criticism (Torres, 2000: 167). Generally, Mowforth and Munt (2009: 84) describe it as too "simplistic" to explain complex behavioral patterns and relationships of the tourism industry, visitors and the community in the destination. Furthermore, its predictive capability is often called into question. Given that quantifiable indicators are not provided, it proves difficult to identify a destination's exact position in the cycle as well as its shift from one stage to another (Haywood, 1986: 156). Furthermore, the length of each stage and the cycle itself vary considerably, e.g. between master-planned resorts like Cancún in Mexico and long-established destinations like Scarborough in England (Cooper and Jackson, 1989: 380).

Cooper and Jackson (1989: 382) point out that the concept of one single carrying capacity inherent to the TALC does not take into account spatial or temporal variation. The assumed homogenous market is another critical factor in the original model as well as in most of its applications: in reality, destinations are likely to cater to a variety of market segments and to introduce them sequentially (Haywood, 1986: 156).

It is noteworthy that the original paper does not contain precise information on the spatial scale for which the model is intended. The given examples range from single resort towns (e.g. Atlantic City) to whole countries (e.g. Mexico) (Butler, 1980: 483-484), although it can be argued that the latter would consist of various individual destinations that may well be located in different stages. Johnston (2001a: 10) states that the most suitable spatial level would be "a resort town that has an environmental or cultural resource as its basis of attraction, plus a recreational business district (or the potential for one to be built)." He further argues that studies of

smaller as well as larger tourist areas would require modifications of the model due to differences in the institutional setting that influences development.

Aside from this criticism, the model is still widely cited (as it is here, incidentally), applied and modified. An extensive overview on these issues was presented in 2006 in two volumes exclusively dealing with the TALC, edited by the author of the original article himself (Butler, 2006a; 2006b). This underlines its importance as being still considered one of the most influential models to describe patterns of tourism development (Hall, 2006: xv).

2.2.2 Models of spatiotemporal patterns of tourism development in developing countries

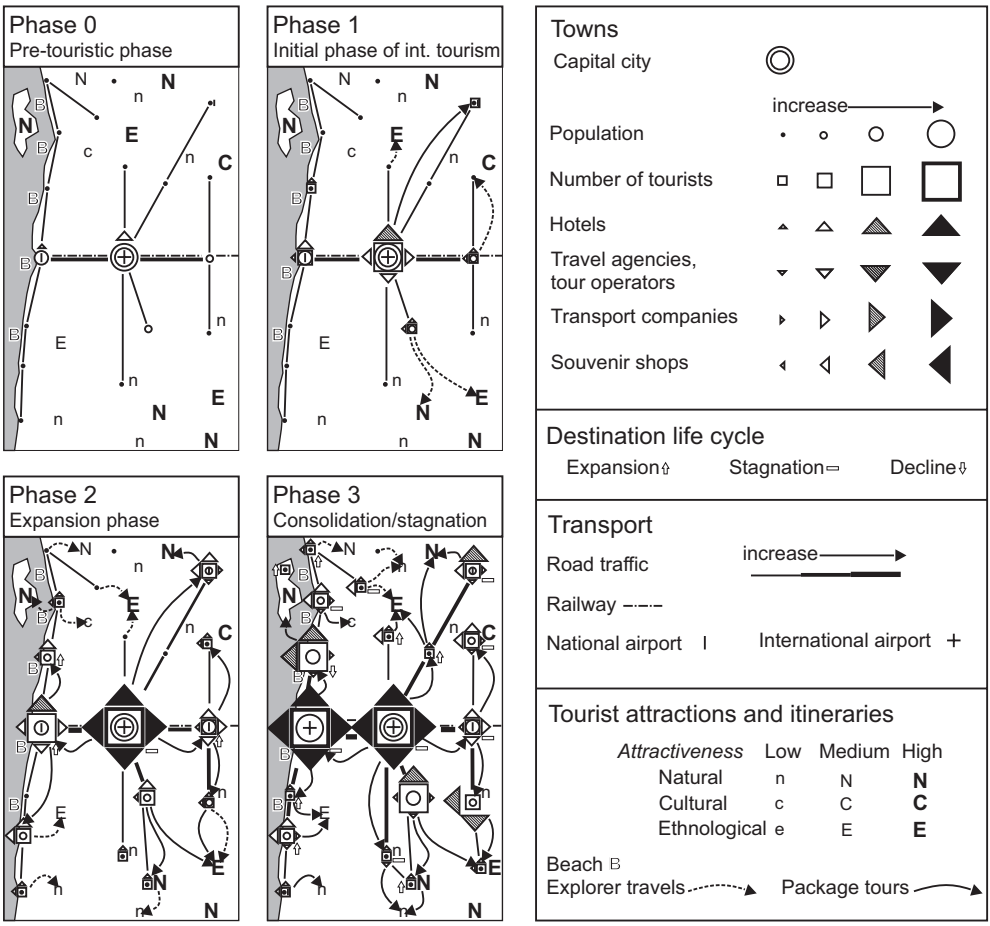
Vorlaufer (1996: 196-200) describes a model of the spatiotemporal patterns of tourism development in developing countries. It takes reference to the TALC and other concepts of tourism development, namely Oppermann's (1993) tourist space model for developing countries. Oppermann takes into account the opposition of the formal and informal tourism sectors, which are often spatially segregated. Furthermore, he claims that these opposed types of tourism differ in terms of their local and regional economic impacts, notably because mass tourism is said to account for higher leakage rates because capital, goods and human resources (at least at the managerial level) have to be imported.

Vorlaufer, on the other hand, does not focus on economic effects at different scales but takes into account the existing tourist attraction system, distinguishing between natural, cultural and ethnical places of interest of different degrees of attractiveness. It is fair to say that Vorlaufer's model reflects Oppermann's concept to a great extent. However, Vorlaufer's model and its visualization seem to be easier to interpret, not at least because he reduced Oppermann's six phases to four (cf. Figure 2-3). Hence, in the following, Vorlaufer's model is presented, but with respect to economic implications, references are drawn to Oppermann's concept where appropriate.

Phase 0: This is the phase prior to the initiation of international mass tourism, between 1950 and 1965 in many destinations. Tourism exists but is mainly restricted to business trips and—in some countries like India or Saudi Arabia—pilgrimages. Tourism is spatially concentrated within the capital or the main secondary cities. Researchers and explorers also travel to peripherally located cultural or natural sites and report on their findings in their home countries, therefore becoming multipliers for tourism development at later stages. Oppermann (1993: 547) remarks that the local population has its favorite areas for recreation which tend to be close to the places of living. As the majority of the population typically resides in the inland agglomerations, coastal areas are hardly used as recreation areas, and lack hotels and other tourism infrastructure.

Phase 1: This phase is also called the *initial phase*. Its beginning is marked by improved transport connections to source markets, notably through air travel. Capitals and primate cities with major airports are the most important entrance points and soon become centers of distribution. A growing number of tour operators begin

Figure 2-3: Vorlaufer's model of the spatiotemporal evolution of international tourism in a developing country



Source: Translated and slightly modified from Vorlaufer (1996: 198-199).

operating in the capital, offering packaged tours to major tourism attractions (e.g. beaches, national parks, cultural sites or exotic tribes) that are well connected to the transportation infrastructure. Secondary cities close to these attractions start developing a small hospitality infrastructure.

Some adventurous independent travelers begin to explore attractions that have so far been untouched by institutionalized tourism development. Oppermann (1993: 547) claims that, despite small overall economic impacts, these "adventurers" cause little leakage as they tend to stay in locally-owned accommodations and consume locally-produced food.

Phase 2: The capital is further strengthening its dominant position through its gateway function to more peripheral parts of the country. However, the average length of stay in the capital decreases as it basically serves as a transit station. Some

of the conveniently located secondary cities convert rapidly into resorts, while "instant resorts" are drafted from scratch, spatially separated from previous tourism infrastructure. Oppermann (1993: 550) argues that those enclavic destinations have "hardly any economic impact" on their surroundings, except for a small part of the local population which finds employment there. This argument will be further discussed below.

Phase 3: At the beginning of Phase 3, more locations are being integrated into the tourism system, despite increasing signs of consolidation. The capital's dominant role is challenged, since other resorts now also feature international airports and direct connections to source markets. Mass tourism reaches more and more parts of the country and almost every major tourism attraction is opened up for the tourist gaze. Extremely remote attractions are still not commercialized by tour operators, but independent travelers visiting them are playing a role as trailblazers for institutionalized mass tourism. Independent travelers generally rely on public transport which is why their intranational travel behavior is described as being more active than the one of institutionalized mass tourists who are mainly staying in isolated resorts (Oppermann, 1993: 550). However, standardized day trips to nearby attractions are on offer in most of those formal tourism sector resorts.

More and more destinations are reaching their saturation point within the product life cycle. Some of the older resorts are registering shrinking demand because uncontrolled mass tourism development is destroying its own base, notably an intact environment (Warde, 2011). In some countries, however, growing domestic tourism might be able to offset the faltering international demand. Nevertheless, Vorlaufer (1996: 200) predicts a phase of downturn if politics and businesses cannot manage to establish a socially and environmentally sustainable tourism industry.

Attempting a critical acclaim of the two concepts presented above, it has first to be stated that they describe patterns of tourism development that have been observed in a multitude of developing countries over the last decades—both Mexico and Morocco are prominent examples (cf. Chapter 4). As with all generalizing models, there are countries that did not or only partially follow the suggested development paths. However, parts of the development patterns described by Oppermann and Vorlaufer can be identified in many developing countries with a considerable tourism industry.

Nevertheless, some critiques can be made. Both concepts do not establish criteria to identify a country's position within the phases. Therefore, their practical applicability is limited, as is a potential use as forecasting tools (a critique they share with the *TALC*). It also seems that both authors underestimate the significance of political decisions to promote instant resorts in peripheral areas. Oppermann's (1993: 549) statement, "taking risks is not very characteristic in the tourism industry," seems to be somewhat contradictory to the creation of those kinds of new destinations that require large amounts of capital in addition to political will.

Turning to the specific features and differences of the two concepts, it can be argued that whereas Oppermann addresses several development theories and their implications on spatiotemporal patterns of tourism development, Vorlaufer's (1996: 196-200) model remains mainly descriptive. Nevertheless, some of Oppermann's

conclusions seem to be based exclusively on dependency theoretical approaches and lack empirical evidence, at least from today's point of view. The assertion of instant resorts having "hardly any economic impact on the surrounding regions" (Oppermann, 1993: 550), for instance, seems to be an overstatement, to say the least (cf. Chapters 4.2 and 4.3 on state-planned Fordist mass tourism development in the regions of Cancún, Mexico, and Agadir, Morocco).

While Oppermann's concept is essentially linear, Vorlaufer recognizes that different tourism destinations may pass through different phases of growth, stagnation and also decline. Oppermann's model, on the contrary, seems to end in a steady state in which "the spatial distribution remains relatively stable" (Oppermann, 1993: 551). While Vorlaufer does address the issue of destinations in decline, he mainly explains decline as a consequence of environmental degradation due to unsustainable development and overexploitation of resources (Vorlaufer, 1996: 200). However, it may be added that, apart from the devastation of natural landscapes, decline may result from various reasons as diverse as changing consumer patterns (cf. Chapter 2.1.3), national and international competition from other destinations (e.g. the Caribbean, Dubai or Thailand competing against traditional European *3S* resorts, cf. Weaver and Lawton, 2007: 220), political decisions or crises (e.g. in the case of political unrest in Kenya after the 2007 presidential elections, cf. Job and Paesler, 2013: 25-26), or any combination of them. Both models fail to completely take into account possible changes within a country's attraction system. While presented as being rather static in Vorlaufer's model (Oppermann does not depict single attractions in his illustration), in reality attractions can be part of a dynamic system that is most likely to change over time. While Vorlaufer rightly points out that environmental degradation can cause a loss of attractiveness of certain sites, he does not consider the possibility of creating new attractions, e.g. museums, theaters, protected areas or amusement parks, to name only a few. *Xcaret*, for instance, an eco-archeological nature theme park created in 1984 on the Mexican Caribbean coast, has become one of the most visited attractions on the Mexican Riviera Maya south of the tourism pole of Cancún—which itself represents the prototype of an instant resort. It represents a type of neo-Fordist attraction that combines elements of all three categories identified by Vorlaufer (natural, cultural and ethnological), albeit staged and packaged for mass consumption.

2.3 Interim summary

The aim of the previous chapter was to analyze recent trends and changes in tourism, and to describe the spatiotemporal impacts of ongoing changes in tourism development at destinations. It was argued that tourism, including tourism in developing countries, has become essentially complex, with Fordist, post-Fordist and neo-Fordist patterns of tourist production and consumption existing simultaneously in time and space. "New" or "alternative" forms of tourism have drawn the atten-

tion of researchers, who describe an increasing number of specialized niche markets and consumer types.

Nature-oriented and supposedly sustainable forms of tourism are typically identified as being among the fastest growing and most important of such niche markets. The emergence of these types of tourism can be related to the growing importance attached to principles of sustainable development over the past decades. Their origins, characteristics, inherent contradictions, and relations to other forms of tourism, including Fordist mass tourism, are described and discussed in the next chapter.

3 Sustainable tourism, nature-based tourism, and protected areas

3.1 The concept of sustainable development and its application in tourism

3.1.1 Definition and history of sustainable development

The concepts of sustainability or sustainable development are widely quoted, accepted, and acclaimed. However, not least because of their pervasiveness, it seems appropriate to recapitulate their definitions, implications and evolution in a historical context. Most often cited is the definition of the 1987 report *Our Common Future*, also known as the *Brundtland Report* (World Commission on Environment and Development [WCED], 1987):

> "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (WCEP, 1987: 54)

However, given the ongoing discourse on sustainable development and its apparent ubiquitous application, it is sometimes overlooked that the notion of sustainability was developed well before the 1980s.

Arguably the first reference to the term sustainability dates from 1713, when Hannß Carl von Carlowitz, a mining administrator in Freiberg, Saxony (Germany), edited the first book on forest sciences (Keiner, 2005: 1). In his *Sylvicultura Oeconomica*, he writes:

> "Forestry cannot be pursued as fast as the cultivation of land. (…) The highest art, science, effort and composition of our lands will consist of realizing such a conservation and cultivation of wood that a continuous and *sustainable* usage shall be possible, because it is an indispensable cause without which the land will not stay in its nature." (Carlowitz, 1713/1732: 105-106; my italics and translation)[6]

Carlowitz proclaimed a sustainable forestry that finds a balance between wood harvest and growth, i.e. an economic activity that lives off the revenues from natural capital without consuming the latter (Schmidt, 2005). This long-term use of resources in forestry is also the central idea of the concept of sustainable development as defined by the Brundtland Commission in 1987 (Keiner, 2005: 1). Von Carlowitz, however, did *not* proclaim the conservation of natural forests and their biodiversity,

6 Original in German: *"Es lässet sich auch der Anbau des Holzes nicht so schleunig wie der Acker-Bau tractiren; […] Wird derhalben die größte Kunst, Wissenschaft, Fleiß, und Einrichtung hiesiger Lande darinnen beruhen, wie eine sothane Conservation und Anbau des Holzes anzustellen, dass es eine continuirliche beständige und nachhaltende Nutzung gebe, weiln es eine unentbehrliche Sache ist, ohnewelche das Land in seinem Esse nicht bleiben mag."*

but rather described a notion of sustainability purely focused on long-term profit maximization (sustained yield) through rational methods of modern forestry, such as the systematic planting of conifers (Warde, 2011: 162).

Sustainable development essentially consists of two components, which, at first sight, seem to be mutually exclusive: development and sustainability. However, as Telfer & Sharpley (2008: 32) point out, "the latter term, somewhat confusingly, is often used interchangeably with sustainable development." Regarding the twin objectives of the concept, sustainable development has been described as representing "a meeting point for environmentalists and developers" (Dresner, 2008: 64). The emergence and evolution of both these components are described within their historical contexts in the following sections.

While von Carlowitz' idea of the sustainable use of resources can be related to the development perspective inherent in sustainable development, the other component, sustainability, has been influenced by the conservation movements that first emerged in the end of the 19th century (Adams, 2009: 29-30). The first environmental organizations—such as the British Royal Society for the Protection of Birds (RSPB), founded in 1898, or the Sierra Club in the USA, founded in 1892—had a limited agenda, focusing on certain species or the preservation of certain landscapes of scenic value. During the second half of the 20th century, however, environmentalism became a political and activist ideology that questioned the technological and economic processes that found the bases of modern human society. It was argued that approaching environmental problems should not be limited to specific areas or single species on a local scale (Telfer and Sharpley, 2008: 33). The idea of a limited "carrying capacity" of the Earth emerged, influenced by such works as Boulding's *Spaceship Earth* (1994), first published in the 1960s, which described Earth as a closed system with finite resources, Hardin's *Tragedy of the Commons* (1968) on individual overexploitation of resources and its consequences for society as a whole, or *The Limits to Growth*, the Club of Rome's report on modeling global population growth and its consequences for the supply with finite resources (Meadows et al., 1972).

The environmentalism of the 1960s and 1970s, as reflected in the works cited above, often predicted "catastrophic" scenarios with respect to pollution and population growth forecasts based on neo-Malthusian arguments, and hence fostered "the notion of a 'global crisis'," which in turn "contributed to the internationalization of both ecology and environmentalism" (Adams, 2009: 52). It is noteworthy to point out that, despite alluding to the "global ecosystem," the conservation movement was essentially a phenomenon of industrialized countries and entrenched in Western thinking. Comparatively, most theories of "development"—despite being often applied in Third World contexts—are also a product of First World schools of thought (Mowforth and Munt, 2009: 31). In this sense, development has been described as a "modernization imperative" (Hettne, 1995: 25) imposed on "underdeveloped" countries to follow, with the aim of achieving the state of development of the Global North. Mowforth and Munt (2009: 32-36) describe the evolution of development concepts since the 1950s: from modernization theory epitomized by Rostow's (1960) "stages of economic growth" (and its counter concept, the dependency theory), emerging from the first "alternative development" approaches of the 1970s

as opposed to the prevailing neoliberal paradigm (e.g. the idea of "endogenous regional development," a precursor of sustainable development), the prevalence of neoliberalism in the 1980s, enforced by powerful supranational actors such as the World Bank and the International Monetary Fund (IMF), to the paradigm of sustainable development evolving during the 1990s. The changes of theoretical approaches over previous decades, presented in this listing in a very condensed form, tended to switch between opposed ideal types of development. For instance, large-scale infrastructure was an essential part of development concepts during some phases, notably the era of the modernization theory, while today's "alternative" approaches favor small-scale, pro-poor and participatory projects.

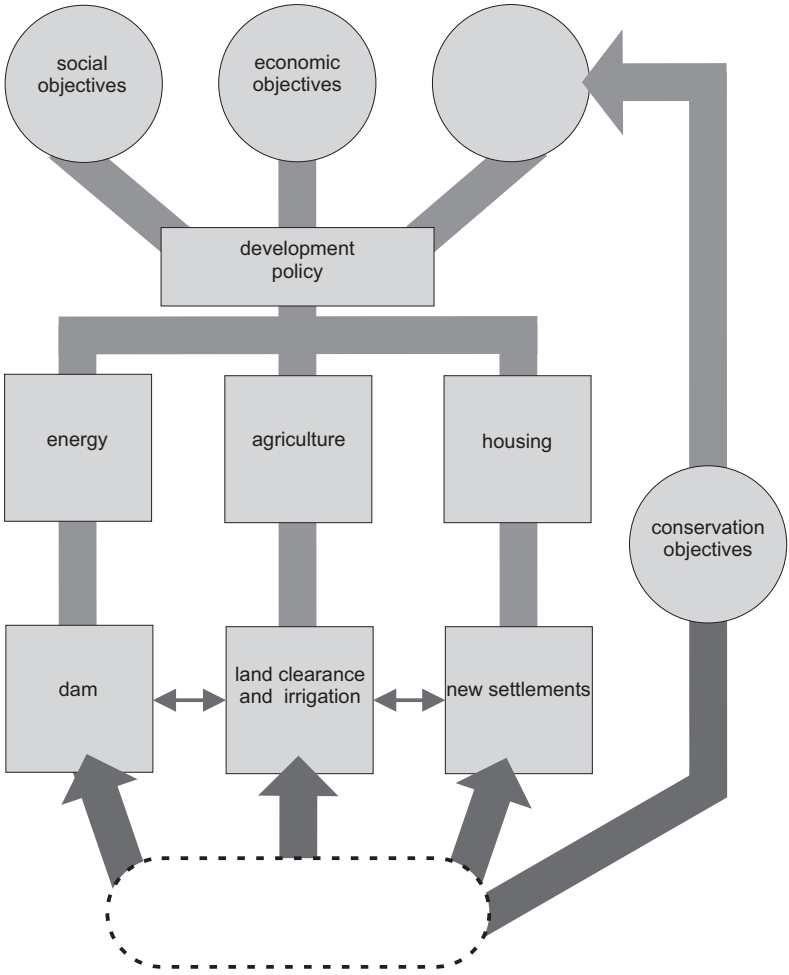
With respect to tourism development, Fordist mass tourism has often been presented as the binary opposite to "alternative" or "new" forms of tourism (cf. Chapter 2), which are deemed as related to the principles of sustainability, a point that is further examined in the next chapter (Mowforth and Munt, 2009: 36). More generally, sustainable development as a new paradigm replaced the orthodox understanding of development based on economic growth, mass production, and efficiency, as exemplary of Fordist production in both capitalism and state socialism. In contrast, sustainable development advocates local self-reliance, small-scale projects, and "a concept of the social world that is rooted in local ecology" (Butcher, 2007: 29).

The UN Conference on the Human Environment, held in Stockholm in 1972, is often described as the key event at which the concept of sustainable development (notably the idea of linking environment and development) was brought onto the international agenda (Adams, 2009: 59). The actual term of sustainable development was introduced in the *World Conservation Strategy* (WCS) report of the International Union for Conservation of Nature (IUCN) which was developed during the 1970s and published in 1980 (IUCN, 1980). It was the WCS that put forward the argument of an existing interdependence between conservation and development (cf. Figure 3-1) (Harding, 2006: 232).

It claims that "development and conservation operate in the same global context," and asserts that the latter is a prerequisite for the first, especially with respect to the rural poor in the developing world, who depend directly from living resources within their immediate vicinity (IUCN, 1980: para. 20.1, 1.10). The WCS, as Adams (2009: 72) points out, draws on fundamental ideas of 1970s environmentalism, such as neo-Malthusian arguments for population growth juxtaposed with predicted rates of land degradation, and argues that ecological and environmental factors set the limits for human action. Following the WCS, economic and social components of development are intrinsically tied to conservation objectives. Hence, it "established the basic triptych of mainstream sustainable development thinking of the 1990s" (Adams, 2009: 74).

In 1983, the UN General Assembly set up the World Commission on Environment and Development (WCED) chaired by the Norwegian politician and former Prime Minister Gro Harlem Brundtland. In 1987, the WCED published *Our Common Future*, arguably the most influential document to promote the sustainable development paradigm, not only because it offered a catchy (and, as seen above, enduring) definition of the concept, but also because it was the first time that the UN General

Figure 3-1: "The need to integrate conservation and development," as depicted in IUCN's World Conservation Strategy (1980)



Sources: Own drawing after IUCN (1980: para. 8)

Assembly adopted the idea of conservation and development being mutually dependent (Butcher, 2007: 24).

Following the groundwork of influential documents such as the *Brundtland Report* (and, to a lesser extent, the WCS), sustainable development was firmly established as the dominant conceptual framework for international development policy by the UN *Conference on Environment and Development* of 1992 (also known as *Rio Earth Summit*) and the *Agenda 21*, the UN sustainable development action plan. During the 1990s, supranational agencies and governments—as well as countless public, private, and voluntary organizations acting on the international, national, regional, or local level—adopted sustainable development as their general principle (Telfer and Sharpley, 2008: 30). Sustainable development's hegemony at a global

stage was confirmed by the *World Summit on Sustainable Development* (also referred to as *Rio +10*) in Johannesburg, South Africa, in 2002, and most recently at the *Rio +20* summit, again in Brazil, where governments agreed on the elaboration of a set of *Sustainable Development Goals* (SDG) as addition to the *Millennium Development Goals* (MDG) which mostly focus on poverty reduction (Griggs, et al., 2013: 305-306).

From an economic perspective, sustainable development implies that an existing stock of both natural and man-made capital should not be degraded. In addition, the environment, together with man-made capital, should be sustained in such a way as to maintain the necessary income flows to meet present and future generations' needs (Stabler, 1997: 15). Under these assumptions, different interpretations of sustainability are possible, which some scholars refer to as "strong" and "weak" sustainability. Thus, strong sustainability is conceptualized from an ecocentric position and assumes that natural capital cannot be substituted by man-made capital. Weak sustainability, on the other hand, considers human needs higher-ranking than conserving the environment in a given ideal state, and postulates that the substitution of natural capital by man-made capital is possible as to maintain the economy's general production capacity. Intermediate positions between these two extremes were also formulated (Hediger, 1999: 1121; Stabler, 1997: 15). Both strands are commonly described as being mutually exclusive. It seems unlikely for industries to adopt the ecocentric approach to sustainability, as doing so might considerably restrict economic growth, or even imply negative growth, e.g. by allowing already degraded ecosystems to recover. However, industries such as tourism rely directly on intact natural environments, and destroying the latter would, according to product life cycle models, inevitably lead to decline (Butler, 1980: 482-483). Thus, with respect to tourism, Stabler (1997: 16) concludes that the industry's "reliance on natural environments as its primary resource base must compel it to move in the direction of ecocentrism," and to accept and implement principles of sustainable development "in order to minimize the impact of its activity."

The previous sections aimed to show how the notion of sustainability and development as "symbiotic" components of one single problem emerged since the 1980s, and how the concept became widely accepted on the global agenda. However, this "new rhetoric orthodoxy" (Butcher, 2007: 25) has not remained uncriticized. The most common point of criticism is arguably the ambiguity of the concept. The popular *Brundtland* definition, for instance, is often described as being far too vague to be suitable for operational monitoring or theoretical study (Grainger, 2004: 12). Hence, sustainable development still "means different things to different people and is applied to innumerable contexts (including, of course, tourism)" (Telfer and Sharpley, 2008: 32).

Grainger (2004: 9) argues that the achievement of "true" sustainable development has been left to a risky trial-and-error process, whereby "almost anything and everything can be presented as a contribution to sustainable development." Some authors criticize sustainable development as a "legitimizing camouflage" (Rist, 2009: 174) for a "business-as-usual mentality," reflected in its focus on (economic) growth (Mowforth and Munt, 2009: 35). Conversely, others argue that imposing principles of sustainability to contexts of Third World development essentially restricts the

latter "to what is local and 'natural'," therefore denying Third World communities the development paths taken by industrialized societies. Following this argumentation, economic growth and industrialization, has always "involved the struggle to progressively harness nature for human ends, and has involved migration and experimentation in search of better ways to live and a more rational understanding of nature" (Butcher, 2007: 29).

Despite these critics of sustainability, the majority of scholars and practitioners seem to agree that "the alternative (i.e. unsustainability) is not an option" (Telfer and Sharpley, 2008: 39). It seems fair to say that pursuing sustainable forms of development is a worthwhile goal, especially on the local level. However, the vagueness of the concept remains and leaves ample room for interpretation. These opposing viewpoints are also reflected with respect to the application of sustainable development to tourism, as will be discussed in the next chapter.

3.1.2 The application of the concept of sustainability in tourism

The debate around sustainable development emerging during the 1970s and 1980s was related to tourism in many ways. Critics of mass tourism pointed out in numerous studies that "tourism is far from a smokeless industry" (Goodwin, 1996: 282). However, they generally agree that tourism, if "appropriately" planned and managed, holds the potential to be in accordance with principles of sustainability (Butler, 1990: 41). As is the case with sustainable development at large, numerous definitions for sustainable tourism have been proposed, and different terms, such as sustainable, alternative, appropriate, green, soft or ecotourism, or sustainable tourism development, are often used interchangeably in the literature (Liu, 2003: 460). The World Tourism Organization (UNWTO), for instance, defines sustainable tourism as:

> "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities." (UNWTO, 2004)

Since the 1970s, tourism has aroused interest within the context of Third World development. For instance, the policy guidelines *Ecological Principles for Economic Development*, which were published jointly by IUCN and the Conservation Foundation in 1973 and count as one of sustainable development's precursors (Adams, 2009: 48), explicitly dedicate one entire chapter to tourism. It is stated that tourism "can generate much needed foreign exchange for financing other sectors of a developing economy," but also "poses special ecological problems not encountered in other types of economic activity" (Dasmann et al., 1973: 113, 114). The WCS, the document that introduced the term sustainable development, refers to tourism at several points, e.g. by suggesting that tourism in protected areas holds the potential to generate income for rural communities and hence to increase local support for nature conservation (IUCN, 1980: para. 14.8). It is noteworthy to point out that,

at least from most environmentalists' point of view, nature conservation and the maintenance of protected areas in developing countries was the unchallenged "core objective" (Brandon and Wells, 1992: 557), while local socioeconomic development, e.g. through nature-based tourism, was merely a means to achieve that goal.

This implies such tourism projects essentially being small-scale and embedded in local contexts, principles that have been identified as being characteristic of sustainable development (cf. Chapter 3.1.1). Just as sustainable development at large has often been presented as the antipode of "orthodox" development approaches, "new" or "alternative" forms of tourism that emerged during the 1980s and 1990s were and still are often described both as the binary opposite to "old" mass tourism, and as the panacea to the various problems commonly attributed to the latter, such as:

- dependency on foreign capital
- spatial segregation epitomized by enclavic resorts, or tourist bubbles,
- increase of intra- and interregional social and economic inequalities,
- acculturation,
- rising crime and prostitution,
- and, not least, environmental degradation (for discussions of the negative effects attributed to mass tourism in developing countries cf.Britton, 1982: 339-347; Brohman, 1996: 48; Job and Weizenegger, 2003: 635-636; Job et al., 2005b: 608-609; Mowforth and Munt, 2009: 94-95; Vanhove, 1997: 60).

It is often and commonly argued that "orthodox" approaches to development based on modernization theory and neoliberalism were mainly responsible for these problems. Since the late 1960s, under the influence of the prevalent neoliberal paradigm and directed by supranational institutions such as the IMF and the World Bank, many Third World countries adopted outward-oriented development strategies. Relying on neoclassical economic theory, it was assumed that international tourism would increase export revenues and hence improve the balance of trade, foster a diversification of the economy while reducing dependency on a few primary exports, and create employment. Tourism was described as an economic activity for which many developing countries posses a comparative advantage, namely warm climate and "exotic" natural and cultural attractions (Brohman, 1996: 50-52). Advocates of neoclassical economics assumed that growth poles, i.e. enclavic tourist resorts, would automatically entail trickle-down effects eventually leading to reduced regional inequalities (Oppermann, 1993: 538), as well as multiplier effects spreading to other economic sectors and inducing sustained economic growth (Brohman, 1996: 50).

However, mass tourism development, as it turned out, did often not meet these high expectations. As pointed out in Chapter 2.1.1, Fordist mass tourism is generally characterized by an oligopolistic supply structure and grand market power in the hands of large transnational companies. Foreign ownership implies high levels of expatriate management, leakages due to imports of goods and services and outflow of profits and foreign salaries (Britton, 1982: 340). Conversely, the majority of local employment generated through enclavic mass tourism resorts tends to be in the

low-skill (and low-paid) service level (Honey, 1999: 9). Therefore, as critics argue, the costs and benefits of mass tourism in developing countries are spread unevenly: while a few winners of tourism development, mostly outsiders to the community or members of the local elite, gain economic benefits, the popular majority must bear the bulk of the social and cultural costs (Brohman, 1996: 59).

Mass tourism, which essentially relies on large-scale infrastructure development, is also accused of causing ecological degradation, often in former pristine environments. Studies on the environmental impacts of tourism are numerous and focus, for instance, on pollution of air and water, loss of biodiversity, land-use loss or increased urbanization (Travis, 1982: 258). Furthermore, Fordist mass tourism is said to have considerable cultural impacts on destinations through acculturation and a resulting loss of cultural identity (Doğan, 1989: 217-218). Cultural products and traditions allegedly lose their original meaning as they are increasingly produced and performed for tourist consumption, and hence give way to staged authenticity (MacCannell, 1973) and commoditization of culture (Cohen, 1988: 372) (cf. Chapters 1.1, 2.1.1).

There are some common assumptions that many authors consider prerequisites of achieving sustainable forms of tourism. For instance, it is argued that increased community participation in tourism planning and a more dispersed, small-scale ownership structure are necessary in order to limit negative impacts on the environment, and to generate a more equal distribution of benefits and costs, e.g. through higher local multiplier effects and backward linkages (Brohman, 1996: 67). To achieve the equity goal, advocates of sustainable tourism tend to call for a more active role of the state than under the free market approach of the neoliberal paradigm. As Shaw & Williams (2002: 318) point out, "[…] there is no market for public goods […], which means that at the present time the social costs of environmental damage are not internalized by tourism businesses unless regulations compell them to do so." Butler (1990: 41) draws "a strong and clear analogy" to the *Tragedy of the Commons* and suggests that "without control and responsibility, there is almost inevitably the overreaching of some or all capacity-limits."

It was already argued in Chapter 3.1.1 that sustainable development has a strong environmental focus. This holds especially true with respect to tourism. While conventional mass tourism is said to offer staged authenticity in the artificial settings of a constructed tourist bubble in enclavic resorts, sustainable tourism is commonly considered offering more "authentic" experiences related to natural environments or "traditional" cultures. Not surprisingly, Butler (1999: 14) observed "that the bulk of the literature and policies which do exist on tourism and sustainable development have a clear emphasis on environmental matters and new, often small-scale developments, generally related to natural or heritage features."

For most people, sustainable tourism involves a positive connotation—a characteristic it shares with its parental paradigm, sustainable development. Therefore, it is commonly (or at least implicitly) assumed that achieving sustainability was a desirable goal for all stakeholders involved in tourism, i.e. businesses, policy planners, local communities, and tourists themselves. However, several authors criticize the apparent widespread unquestioned advocacy of sustainable tourism. Shaw

and Williams (Shaw and Williams, 2002: 302-303), for instance, deplore a lack of a "critical political economy perspective" and suggest that the general vagueness of the concept has caused "confusion from this range of terms, tourism products, and management philosophies." Butler (1999: 11) argues in the same direction when he remarks that sustainable tourism is such a vague concept that it can be used as a justification for economic growth by the industry, as support for conservation measures by environmentalists, as "an opportunity to use words rather than actions" by politicians, and, not least, as a pretext by tourists for feeling good during their hard-earned vacation.

The last part of the statement alludes to the widespread and widely quoted notion that the typical consumer of sustainable tourism products is a "well-informed, selective individual from a higher socioeconomic group" (Jones, 1987: 356). The definition refers to attributes that were also identified as being characteristic for post-Fordist consumerism (cf. Chapter 2.1.2). As Mowforth and Munt (2009: 60) suggest, the mostly positive way in which post-Fordist tourists are presented implies the common assumption that such "new types of consumption and consumers may help to create alternative and beneficial forms of Third World tourism that help to break dependent relationships," and thus contribute to more appropriate patterns of development. It becomes clear from such implicit assumptions that sustainable tourism is essentially a value-laden concept. Butcher (2003: 8), one of sustainable tourism's sharpest critics, argues that the concept represents "an ethical imperative," and asserts that it "is not simply suggested as an option for prospective tourists, but is advocated as a solution to problems caused by Mass Tourism."

Several problems arise from such an uncritical acclaim to sustainable tourism and new or alternative tourists. Butler (1990: 42-43) was one of the first authors to touch on the issue of class prejudice in the widespread praise of new tourists, and the apparent dislike of mass tourists, who are generally associated with inappropriate social behavior, lower spending power, etc. By contrast, according to Butler (1990: 43), common definitions of new tourists resemble First World academics in many ways—"highly educated, affluent, mature, and probably white"—which could be one of the reasons "why many academics are at least basically sympathetic to alternative tourism." It has also been argued that the ethical imperative on which sustainable tourism is grounded represents an expression of cultural relativism. Many case studies dealing with alternative, supposedly sustainable forms of tourism focus on "traditional" cultures entrenched in and living in "harmony" with their local natural environment, e.g. through practices of subsistence agriculture and craft production—essentially the binary opposite of modern societies and economies. Butcher (2003: 81; 2007: 127) argues that advocates of sustainable tourism, by elevating the host culture with the aim of "preserving" it from changes resulting from contact with mass tourism, implicitly restrict its development options through substantial socioeconomic change.

Although most other authors probably do not share Butcher's (2003; 2007) fundamentally critical position with regard to sustainable tourism, there are still other problematic issues associated with the concept. One refers to the instrumentalization of the generally positive notion of sustainable tourism for mere marketing pur-

poses, a phenomenon sometimes referred to as "green washing" (Dawson, 2001: 42). As Butler (1999: 13) observes, "many small-scale tourist operations in a wide variety of locations have suddenly begun to call themselves 'sustainable' […] in the hope of successfully competing for the 'appropriate tourist'."

Arguably the most significant point of criticism refers to sustainable tourism's original notion of representing an alternative to the notorious problems resulting from mass tourism. However, if sustainable tourism is essentially small-scale, nature-based, and spatially dispersed (i.e. the opposite of conventional resort mass tourism), then it might be at best, as Wheeller (1991: 92) has predicted two decades ago, a "micro solution" to a "macro problem." Although a "crisis of *mass tourism*" (Poon, 1993: 3, italics in original) has been described by some observers, notably in the 1980s and 1990s, it seems evident today that mass tourism instead of disappearing, is here to stay, if in a more flexible and adaptive neo-Fordist form. Despite high growth rates of post-Fordist niche markets, conventional mass tourism still represents the majority of tourism in many destinations (Aguiló et al., 2005: 230). Given the apparent permanence in many tourists' preference for *3S* vacation, it would be extremely difficult, as Liu (2003: 459) remarks, "to cater for the extra billion international tourists projected by WTO (1998) in 20 years' time in national parks and heritage sites." This statement touches on another critical issue in the context of small-scale, nature-based tourism: it opens new destinations to the tourist gaze, more often than not in naturally fragile and culturally sensitive environments (Liu, 2003: 470). Furthermore, there is evidence that small-scale alternative structures may not remain small in perpetuity, but rather play their role as trailblazer for mass tourism developments (Wheeller, 1991: 92-93). This possibility is inherent in the models of spatiotemporal tourism development presented in Chapter 2.2.

As in development paradigms in general (cf. Chapter 3.1.1), mass and alternative forms of tourism have been presented as being mutually exclusive (Mowforth and Munt, 2009: 36). However, such thinking in binary opposites can be problematic. For instance, Butler (1990: 41) suggests that "making simplistic and idealised comparisons of hard and soft, or mass and green tourism, such that one is obviously undesirable and the other close to perfection, is not only inadequate, it is also grossly misleading." While some advocates of sustainable tourism argue that "evidence quickly grew that [mass tourism's] economic benefits were marginal and its social and environmental costs high" (Honey, 1999: 9), other authors critically remark that such claims, not only in tourism contexts, might downplay or completely ignore "the very real gains from orthodox development […] in favour of sometimes idealistic and neo-populist alternative visions of the future" (Parnwell, 2002: 113). Conversely, in many places, small-scale, nature-based tourism may not provide a sufficient economic base for long-term (read: sustainable) economic development.

One key issue of this chapter is to suggest that sustainable tourism and mass tourism are not necessarily mutually exclusive. In fact, nowadays, the major challenge of applying sustainable principles to practice seems to be making existing mass tourism more sustainable (Liu, 2003: 471). Telfer and Sharpley (2008: 42) suggest that sustainable tourism development should be considered a sector-specific application of the paradigm of sustainable development and contribute to wider

economic and social development by sharing this paradigm's goals and principles. Such an approach explicitly includes all forms of tourism, conventional mass tourism as well as post-Fordist niche markets such as nature-based or heritage tourism. Hence, the latter should be regarded as complementary rather than as opposed to the first (Butler, 1990: 44; Liu, 2003: 471).

The two case study areas—the SKBR in Mexico, and the SMNP in Morocco—are both situated within regions with a highly dynamic and dominant mass tourism sector, where alternative, supposedly sustainable forms of tourism (such as ecotourism) are increasingly offered as standardized "add-ons" to packaged *3S* vacations. However, both protected areas are also visited by a more alternative clientele, e.g. special interest tourists, such as fly-fishers or birdwatchers as well as ecotourists in a stricter sense of the term. These issues are discussed in more detail in Chapters 4, 6 and 7. At this point, it seems important to underline that tourism systems in many destinations are more complex than suggested by the rather simplistic notion of an essential mass-alternative dichotomy.

3.1.3 Definitions, distinctiveness, and interrelatedness of sustainable, nature-based, eco, and mass tourism[7]

Throughout the precedent chapter, it was argued that a wide range of terms exist, that are in some way or another related to sustainable tourism development, and often used interchangeably. In this chapter, an attempt is made to reduce the confusion arousing from this "plethora" (Shaw and Williams, 2002: 302) of terms, distinctive features, and interrelatedness of sustainable tourism, nature-based tourism, ecotourism, and mass tourism.

Notably the concepts of nature-based tourism (or nature tourism) and ecotourism are often subject to ambiguity and confusion. According to common descriptions ecotourists tend to travel to "relatively undisturbed natural areas" (Ceballos-Lascuraín, 1991: 31) in such a way that their activities "conserve the environment and improve the well-being of local people" (TIES, 1991: 3) and hence "contribute to sustainable development" (Björk, 2000: 196). Ecotourism can therefore be described as a sustainable form of the broader category of nature-based tourism, a category which "encompasses all forms of tourism—mass tourism, adventure tourism, low-impact tourism, ecotourism—which use natural resources in a wild or undeveloped form" (Goodwin, 1996: 287).

However, given the apparent consensus in the literature about this conceptual distinction (Fennel, 2008: 20), the large number of proposed definitions of ecotourism is somewhat surprising. Fennell (2001: 406), for instance, lists 85 different definitions of the concept but remarks that "the list is in no way exhaustive." Consequently, ecotourism research has more often than not occurred in a non-consistent manner, and different case studies are rarely comparable. As Hvenegaard (2002: 7)

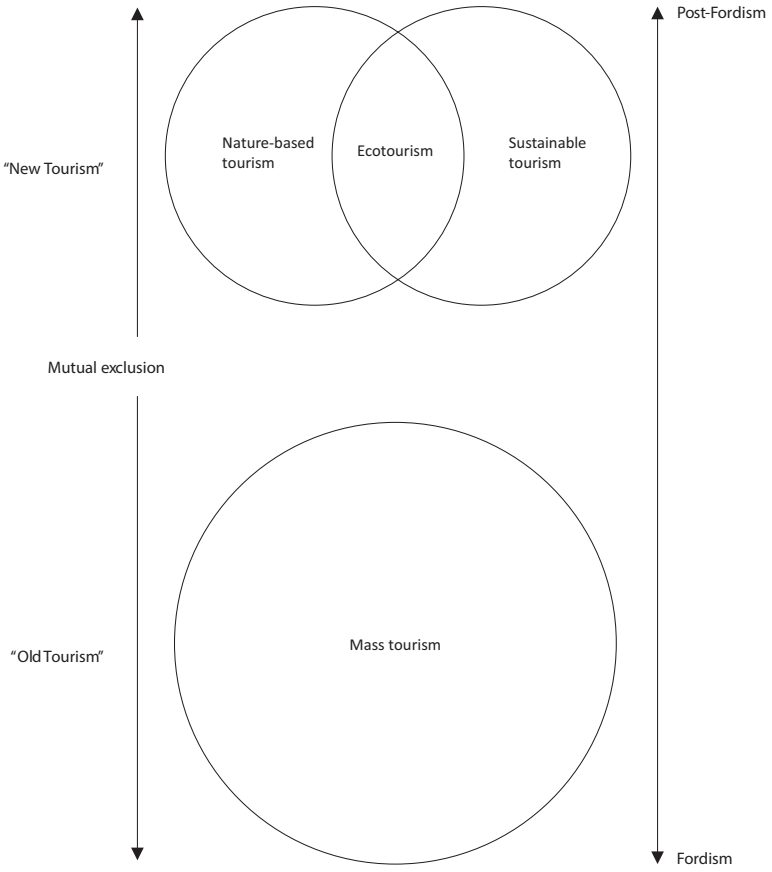
7 This chapter includes modified passages from a published article to which the author of this dissertation was the main contributor (Arnegger et al., 2010).

observes, there are studies that identify ecotourists when engaging in certain activities (Ceballos-Lascuraín, 1991: 32), others focus on their motivation for traveling (Ballantine and Eagles, 1994) or simply consider all visitors at a certain site, e.g. a protected area, to be ecotourists (e.g. Tobias and Mendelsohn, 1991: 91). The latter example indicates that the terms nature-based tourism and ecotourism are still often used interchangeably, despite the clarification of their relationship pointed out above (e.g. Mehmetoglu, 2007b: 200). This ongoing controversy over appropriate definitions and applications has arguably hampered both the further development and implementation of the concepts (Ross and Wall, 1999: 124). In the light of this lack of definitional clarity, and the increasing complexity of tourism in protected areas, the term ecotourism would be too narrow to essentially capture the reality of *all* tourism forms in most natural landscapes. Hence, I follow the apparent consensus in the literature in arguing that ecotourism's distinctive feature is its focus on sustainable development (by making a contribution to nature conservation, and by enabling local communities to use natural resources in non-consumptive way), and that it therefore represents a relatively small segment of the larger nature-based tourism market (Fennel, 2008: 20, 24; Goodwin, 1996: 287-288; Weaver, 2001b: 105).

As argued in Chapter 2.1.2, sustainable tourism, nature-based tourism, and ecotourism have all been presented by some authors as new or alternative, post-Fordist forms of tourism, and hence as opposed to "conventional" Fordist mass tourism. Figure 3-2 attempts to illustrate this traditional approach of a supposed mass-alternative dichotomy. It also shows the relationship between nature-based tourism, ecotourism, and sustainable tourism: Nature-based tourism does not need to be sustainable, while sustainable tourism could also be non-nature-based; ecotourism, however, is both nature-based *and* sustainable by definition, and is hence situated where those two forms of tourism overlap.

As pointed out above, nature-based tourists and more strictly defined ecotourists are often described as post-Fordist, environmentally conscious middle and upper-class customers (Jones, 1987: 356). Some authors argue that tourists' motivations and ethical values form an integral part of meaningful ecotourism definitions (Fennel, 2008: 25). Ecotourists' underlying values would hence represent a distinctive feature of this tourist type, e.g. as opposed to mass tourists. However, other scholars question the notion of nature-based tourists or ecotourists forming an essentially homogenous category. Blamey and Braithwaite (1997: 42), for instance, referring to a study on social values of potential ecotourists, describe a significant heterogeneity in their value orientation. They conclude that consumers of ecotourist products "may not be as environmentally aware and socially conscious as often thought" (Blamey and Braithwaite, 1997: 36). More recently, a study among participants in ecotourism activities in an Australian national park found no significant differences in environmental attitudes between ecotourists and other travelers (Beaumont, 2011: 144-146). In an attempt to overcome this controversial point, Weaver (2001b: 105-106; Weaver and Lawton, 2002: 271; 2007: 1170) repeatedly refers to the distinction between "hard" and "soft" ecotourism, drawing on the notion that ecotourism and mass tourism are not mutually exclusive and thus following a comparable line of argumentation to the one used in Chapter 3.1.2 with reference to sustainable tourism

Figure 3-2: Interrelatedness of nature-based tourism, sustainable tourism and ecotourism, and the notion of "new" and "old" tourism being mutually exclusive (traditional approach)



Source: own drawing on the basis of illustrations proposed by Strasdas (2001: 8), Weizenegger (2003: 43), Weaver (2001a: 79) and Fennell (2008: 15)

in general. According to this scheme, "hard" ecotourists can be considered environmentally conscious visitors traveling in small groups on long, specialized trips including physically challenging, direct experiences with nature. The "soft" segment, also described as "mass ecotourists," on the other hand, includes higher numbers of tourists on short-time nature-based tourism experiences, e.g. vacationers spending an all-inclusive holiday in a coastal resort, who are visiting a nearby protected area on a one-day excursion (Weaver, 2001b: 106). The increasing importance of soft or mass ecotourism has been interpreted as a mainstreaming of this former post-Fordist niche market. Wheeller (2006: 341) describes ecolodges in the Brazilian Amazon, and observes that traveling upstream on the Rio Negro from the state capital of Manaus is like a journey "back in time," as lodges along the way become increasingly less comfortable, as one moves farther away from "civilization":

> "The further up river they are then, as a rough indicator, the more ‚primitive' the ecolodge, and concomitantly the more natural, the more supposedly authentic the visitor experience. Conversely, those lodges in close proximity to Manaus offer the tourist a safer, sanitised environmental bubble. Generally speaking then, the distance from the tourist gateway influences/determines at what stage each ecolodge is at in terms of the overall life cycle of the generic Eco-Lodge." (Wheeller, 2006: 341)

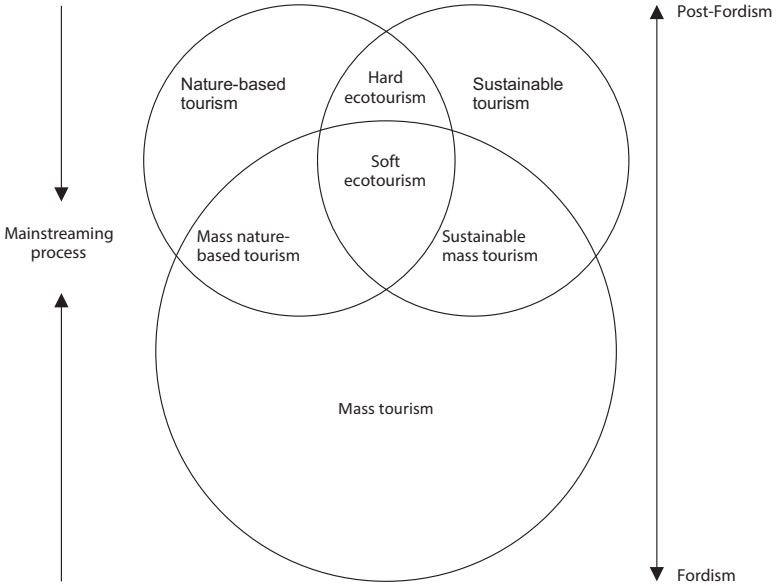
In an interesting confrontation, Wheeller (2006: 341-347) compares the evolution of ecolodges (and ecotourism at large) with the King of Rock 'n' Roll's "earthly life cycle," from adolescent rebel to a mass market product "corrupted by commodification." With regard to both ecotourism and Elvis, he concludes (2006: 347): "The King is Dead. Long Live the Product." While probably not everybody would share Wheeller's sharp criticism of the mainstreaming of ecotourism, the tendency as such is recognized by various other scholars (e.g., Fennel, 2008: 45; Weaver, 2001b; Wight, 2001: 39).

It was already argued in Chapter 3.1.2 that all forms of tourism, including mass tourism, can (and in fact, should) be sustainable. Additionally, it seems evident that nature-based tourism does not necessarily need to be small-scale. At Yellowstone National Park, for example, over 1 million visits were registered during the high season in July 2010 (i.e., 30,065 per day) (National Park Service, 2011). Hence, while mass tourism can indeed be nature-based or contribute to sustainable development, one could also identify segments of mass or soft ecotourists as suggested by Weaver (2001b) who argues that "ecotourism as mass tourism" is not a contradiction, but a reality in many parts of the world. In highly frequented protected areas such as Yellowstone, the "95-5" rule indicates a high share of soft ecotourists (up to 95% of all visitors) who are typically confined to the relatively small areas of the park (ca. 5%) that provide tourist services and facilities (Weaver, 2005: 450). Although being more skeptical about a possible symbiotic connection between ecotourism and mass markets, Fennell (2008: 39, 227; 2001b: 104) agrees with Weaver that this issue requires more attention.

The move of mass tourism toward alternative forms of tourism—or the other way round, as expressed by the notion of mainstreaming tendencies in ecotourism—is illustrated in Figure 3-3. Arrows on the left indicate an ongoing mainstreaming process, with a potentially increasing importance of (neo-) Fordist hybrids of mass tourism and alternative forms of tourism.

Chapter 2.1 described how changes in tourism production and consumption have been interpreted as the emergence of new forms of tourism, as opposed to older forms often associated with Fordist mass tourism. Chapters 3.1.1 and 3.1.2 focused the rise of sustainable tourism within the context of the sustainable development paradigm. It was argued that sustainable tourism, nature-based tourism, ecotourism, and the like are typically described as new, post-Fordist forms of tourism. The previous chapter contains an attempt to dissolve some of the apparent oppositions inherent in these concepts—notably the notion that an essential dichotomy exists between Fordist mass tourism on the one hand, and arguably more sustainable, small-scale, nature-based forms of tourism on the other. The approach represented

Figure 3-3: Interrelatedness of nature-based tourism, sustainable tourism and ecotourism, and the notion of mainstreaming (emerging approach)



Source: own drawing

in Figure 3-3 attempts to capture the increasing complexity, where different forms of tourism are interdependent and overlapping, rather than mutually exclusive.

Protected areas represent important settings for nature-based tourism. For example, the WCS, the seminal work that shaped the notion of the sustainable development paradigm in 1980, acknowledges the importance of tourism in protected areas as a potentially sustainable economic activity for "conservation-based rural development" (IUCN, 1980: para. 14). Protected areas in spatial proximity to traditional mass tourist resorts are typical locales where different forms of tourism coexist, which may even be mutually dependent. These relationships are discussed in the next sections, following a short introduction to the history and types of protected areas, and their role as tourist destinations in general.

3.2 Protected areas and tourism

3.2.1 Historical overview of the development of area protection

Area protection is not a phenomenon of modern times. For instance, the aristocracy in medieval Europe used to own protected reserves for hunting purposes. However,

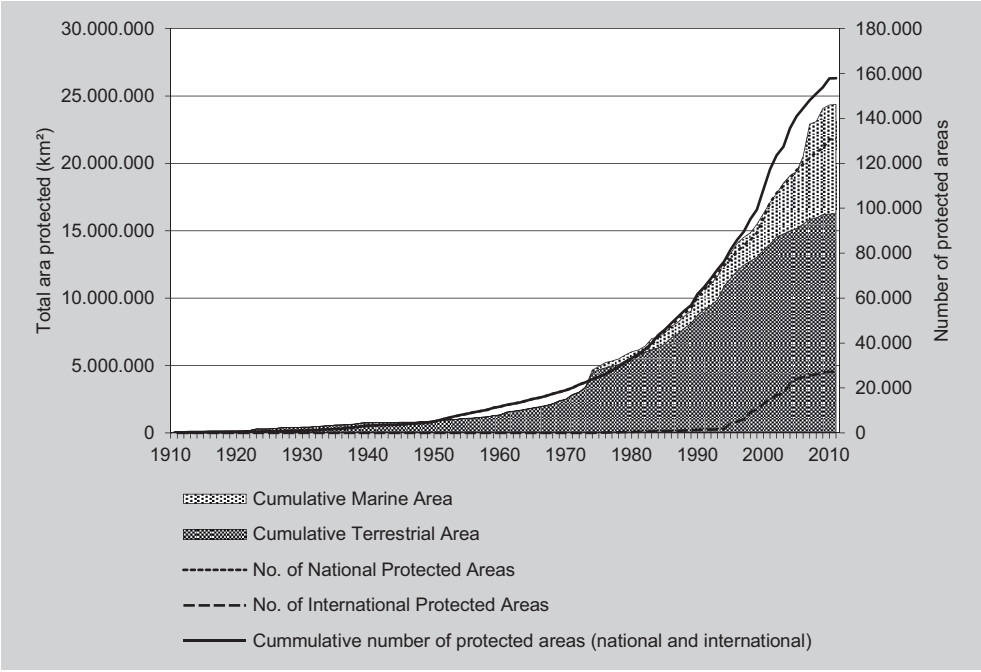
the modern era of protected areas began in 1872, when Yellowstone National Park was established in the western United States as a symbol of national importance and identity. Yellowstone was dedicated by law as a public park, "for the benefit and enjoyment of the people" (Eagles et al., 2002: 5-6). It was the forerunner for today's national park system in the United States. Other countries followed, e.g. Australia (Royal National Park, 1879), New Zealand (Tonariro, 1894), and Canada (Banff National Park, 1885) (Boyd and Butler, 2000: 17-18; Eagles et al., 2002: 6-7; Weizenegger, 2003: 17).

In the first half of the twentieth century, while the USA and Canada kept expanding their national park systems, the first national parks in Europe were established in Sweden (eight national parks designated in 1909) and Switzerland (Swiss National Park, 1914) (Weizenegger, 2003: 17). Other European countries followed, including Italy, Romania, Greece, Spain, Iceland and Ireland. The major European powers, however, were more reluctant. Great Britain, France and Belgium, for instance, focused on the creation of protected areas in their respective colonies in Africa and Asia (Hall and Frost, 2009: 7). With respect to the particular focus of this dissertation, Mexico established its first national protected area (the *Desierto de los Leones* National Park near Mexico City) as early as 1917, just after the end of the Mexican Revolution (Brenner et al., 2008: 49); in Morocco, the Toubkal National Park in the High Atlas mountains was created in 1934 (Arnegger and Aransay, 2011: 59).

After WWII, national parks and other protected areas spread around the globe. As Hall and Frost put it (2009: 7), "nearly every country boasted them—and indeed one could hardly boast of being a true nation without one—such was the importance of national monuments and nature." In quantitative terms, a global boom in the numbers of formally established protected areas could be observed since the 1960s. Consequently, the extension and number of designated areas has also risen considerably (cf. Figure 3-4). Currently, over 100,000 protected areas exist worldwide, covering nearly 12.7% of the planet's terrestrial surface (Bertzky et al., 2012: 5). Over the last four decades, the combined size of the world's protected areas grew from an area the size of the United Kingdom to an area the size of South America (Dudley, 2008: 2). However, it has to be noted that protected areas are marked by a considerable heterogeneity in terms of their legal status, extension, biological as well as socioeconomic conditions, degree of human impact on natural resources, and management efficiency. Particularly in developing countries, many protected areas lack efficient management structures and funding, and can hence be considered "paper parks" (Bonham et al., 2008: 1582).

Despite the recent growth of the number and surface area of protected areas, they are spread unevenly over the world. Large parts are situated in otherwise "worthless lands" (Runte, 1973; 1977)—a phenomenon sometimes illustratively referred to as rocks and ice syndrome (Terborgh and van Schaik, 2002). One example is Greenland's Northeastern National Park with 972,000 sq. km (Brenner et al., 2008: 50-51). Conversely, the share of protected lands in some forest and grassland ecosystems, fresh waters, coastal and marine areas, is significantly lower, as many of these ecosystems are also preferred areas for human settlements and thus face higher pressure and more land use conflicts (Dudley, 2008: 2; Nilsson and Gotmark, 1992).

Figure 3-4: Growth in extension and number of protected areas (1910-2011)



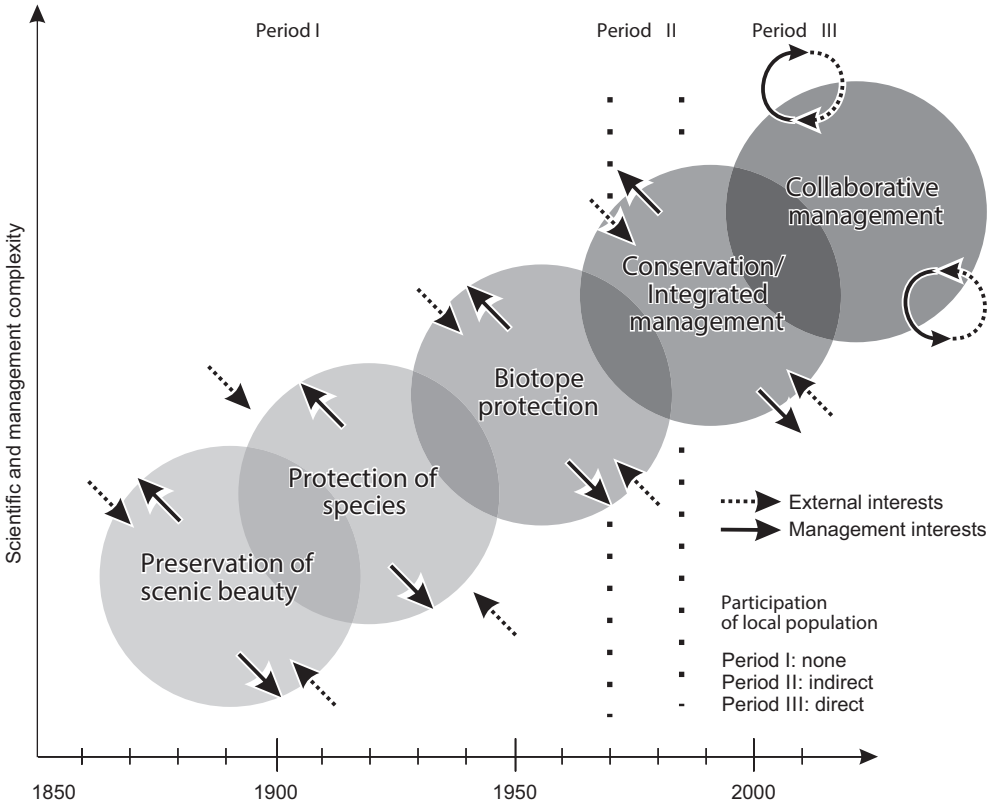
Source: United Nations Environment Programme (UNEP) (2011)

However, even if some large protected areas are situated in very remote locations, others are located in relatively densely populated areas and subject to human use, e.g. tourism. In such locations, protected areas can have considerable socioeconomic impacts. For instance, a study by Wittemyer et al. (2008) revealed that human population growth rates in 10-km buffer-zones around protected areas in Africa and Latin America were, on average, almost twice as high as national rural growth rates in the respective countries. Reasons include the high amounts of funding for protected areas by international donors, including development and capacity-building projects aimed at local communities, and the creation of jobs, access roads, schools or hospitals (Wittemyer et al., 2008: 124-125). It could be added that, apart from directly created jobs through financial injections into the regional economy, established labels for protected areas can imply a competitive advantage against other competing regions on the tourism market, and hence support the creation of additional employment opportunities. This aspect is further discussed in Chapter 3.2.4.

Aside from the quantitative increase in number and extension, protected areas also experienced a qualitative development of management principles. For almost one century, protected areas, in particular national parks, the oldest category, were strictly protected natural reserves, established mainly for the purpose of preserving aesthetic natural landscapes and scenic beauty (Brenner et al., 2008: 51). As argued in Chapter 3.1.1, the idea of nature protection essentially stems from industrialized

countries; however, Western nations also imposed their ideas about conservation on colonial and imperial territories. In Africa, for instance, a growing concern of colonial rulers was related to the decline of game until the end of the 19th century, which ultimately led to the complete denial of hunting to Africans, while European hunters were, as a matter of course, allowed to practice their sport in hunting reserves and national parks (Adams, 2009: 30-32). "Fencing out" local communities (i.e. the enforced relocation of local people) was common practice in many areas. Traditional uses (e.g. hunting or subsistence farming) were forbidden by law and this "fences-and-fines" policy was enforced by armed rangers or even military forces. As a consequence, support for such protected "islands" and their inward-oriented management bodies was minimal among local communities (Brenner et al., 2008: 52). The protection focus during the first three phases as depicted in Figure 3-5 shifted from the preservation of scenic landscapes to single emblematic species, such as tigers or mountain gorillas, and later to the conservation of biotopes, taking into consideration the importance of interconnected processes in ecosystems. However, as a common characteristic of all three phases, local people were not considered an integral part of nature protection approaches (Job et al., 2013a: 208).

Figure 3-5: Evolution of protected area management principles



Sources: Woltering (2012: 18); Slocombe and Dearden (2009: 350)

Beginning in the 1970s, a marked shift in management principles could be observed in at least three ways (cf. Figure 3-5). First, governments recognized that a fences-and-fines policy would not prove fruitful in the long run, and allowed a certain degree of participation in decision-making to local communities. Secondly, certain forms of economic activity (e.g. traditional agriculture or tourism) were permitted in order to increase support for protected areas. And thirdly, increased attention was given to the protected area edges, as increased population growth rates (see above) began to threaten the ecological integrity of formerly isolated and sparsely-populated regions (Brenner et al., 2008: 52).

In the fourth phase, entitled "conservation and integrated management", protected areas were increasingly seen as integral parts of regional economies that could provide income for local communities, e.g. through the promotion of nature-based tourism, so as to offset use-restrictions. Participation of the local population remained indirect, as most regulations and measures were elaborated and implemented by the park management and other external administrative bodies and decision-takers (Job et al., 2013a: 208-209).

The most recent approach, "collaborative management", intends to overcome such imbalances of power: in "indigenous and community conserved areas" (ICCA; cf. UNEP-WCMC, 2013), local indigenous communities conserve and manage protected areas of natural or cultural landscapes, and gain income from sustainable economic activities, e.g. tourism (Becken and Job, 2014: 510). State bodies are still considered important, but not the dominant actors in such governance structures, which ideally ensure the protection of biodiversity and support socially balanced participation and income opportunities for members of local communities – thus contributing to the goals of sustainable development (Job et al., 2013a: 209). Today, such collaborative management structures that formally include the local population in decision-making processes are widely regarded as preferred approach for protected areas (Woltering, 2012: 19-20). In contexts where power imbalances exist between local or indigenous communities (and, for instance, the government), collaborative approaches provide a basis for equal participation based on legally binding agreements (Tipa and Welch, 2006: 388).

It has to be stated that the phases illustrated in Figure 3-5 are not always clearly distinguishable, and exist parallelly in time and space. The more recent phases are not fully incorporated in protected area policies of all countries or regions, and top-down decision-making structures still predominate in parts of the world. However, a trend toward participative approaches is visible and, for instance, exemplified by the fact that the share of the total area protected where the sustainable use of natural resources is explicitly allowed increased from 14% in 1990 to 32% in 2010 (Bertzky et al., 2012: 25).

The integration of socioeconomic aspects in protected area management is articulated in the last part of the IUCN's definition of protected areas:

> "A protected area is: A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term *conservation* of nature with associated ecosystem services and *cultural values*." (Dudley, 2008: 8, my italics)

The major shift in management principles since the 1970s is perhaps best embodied in the Man and the Biosphere Program (MAB), established in 1970 by the United Nations Educational, Scientific and Cultural Organization (UNESCO). One of the major outcomes of this program, the protected area category of biosphere reserves, is presented in the next chapter, among other important protected area types.

3.2.2 Types of protected areas

In 1994, the IUCN assumed that, globally, around 140 different names are applied to protected areas of different types (IUCN, 1994: 1). Notably national and international categories and terms differ widely, whereby same terms used in different countries, such as "national park," are not necessarily comparable (Weizenegger, 2003: 9). In addition, while most protected areas are created by governments, there is an increasing number of protected lands established by local communities, indigenous peoples, NGOs or private individuals (Dudley, 2008: 2). To overcome this somewhat confusing diversity, the IUCN provides a set of categories for protected areas with different goals, functions, and characteristics to create a framework with international applicability.

There are, however, other schemes of protected area categories, both on the national and global level. Some of the most important types of protected areas are presented below.

3.2.2.1 IUCN management categories

As stated above, the IUCN management categories were established with the aim of creating a global framework for protected area classification, i.e. common standards and terminology. Although efforts to clarify the diverse terminology of protected area categories can be traced back into the 1930s, the first edition of the IUCN framework was issued in 1978 and since then updated on a regular basis, the latest version being published in 2008 (Dudley, 2008: 3-4).

In its current edition, IUCN distinguishes six different types of protected area management categories. The single categories reflect different degrees of human intervention, ranging from Category Ia (strict nature reserve), where "human visitation, use and impacts are strictly controlled and limited," to Category VI (protected area with sustainable use of natural resources), in which "low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area" (Dudley, 2008). It seems important to underline once more that a particular protected area's name does not necessarily indicate it can be classified as belonging to an IUCN category of the same designation. E.g., despite its title, the SMNP in Morocco, one of the case study areas of this dissertation, is classified as an IUCN Category V area according to the World Database on Protected Areas. An overview of definitions on IUCN's management categories is given in Table 31.

IUCN stresses the notion that the system is not intended to be hierarchical, i.e. all categories can make a valuable contribution to conservation, although not all categories might be equally appropriate in all situations. Independently of particular man-

agement categories, all protected areas should reserve at least three quarters of their area for the main objective ("75% rule"). However, other uses, e.g. tourism, villages, traditional agriculture or sustainable hunting and fishing, are explicitly permitted within specific zones (Dudley, 2008: 10, 35).

Table 3-1: IUCN protected area management categories

Category	Denomination	Description/management goals
Ia	Strict nature reserve	Strictly protected areas set aside to protect biodiversity and, possibly, geological/geomorphological features
		Strictly controlled and limited human visitation, use, and impact
		Reference for scientific research and monitoring
Ib	Wilderness area	Usually large unmodified or slightly modified areas retaining their natural character
		No permanent human habitation
		Protected and managed as to preserve their natural condition
II	National Park	Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems of the area
		Also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational, and visitor opportunities
III	Natural monument or feature	Protect a specific natural monument, such as a landform, sea mount, submarine cavern, geological or living feature
		Generally small
		Often high visitor value
IV	Habitat/species management area	Aim to protect particular species or habitats
		Many category IV protected areas need regular, active interventions to address the requirements of particular species or to maintain habitats
V	Protected landscape/seascape	Area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural, and scenic value
		Safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values
VI	Protected area with sustainable source of natural resources	Conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems
		Generally large, with most of the area in a natural condition, and a portion under sustainable natural resource management
		Low-level non-industrial use of natural resources compatible with nature conservation is one of the main aims of the area

Source: Dudley (2008: 13-23)

3.2.2.2 UNESCO's "Man and the Biosphere" Program

The UNESCO's "Man and the Biosphere" program, established in 1970, represents one of the most prominent epitomizations of a shift toward integrative approaches

in protected area management. The concept of biosphere reserves is an outcome of the broader paradigm of sustainable development, as described in Chapter 3.1.1. For instance, biosphere reserves often include local communities within their borders, and allow and encourage practices of sustainable resource use. Accordingly, biosphere reserves are seen by some authors as a more modern and more ambitious concept for area protection than, for instance, the more strictly protected and generally sparsely-populated national parks, due to their triple objective of conservation and scientific research and monitoring, as well as socioeconomic rural development (Tangley, 1988: 148).

Zoning is commonly described as a crucial instrument for achieving this mandate. Biosphere reserves should be divided into a core zone, a buffer zone and a transition area. The core zones are reserved for the protection of ecosystems and monitoring, while in the buffer zones and transition areas extensive land use and human settlements are possible (Hammer, 2003: 17-18). Buffer zones surround and protect the core areas. Permitted activities should be compatible with sound ecological practices and include tourism, environmental education and scientific research. Transition zones are crucial for biosphere reserves' development function, as they may contain traditional agricultural landscapes and settlements of local communities and should serve as areas where different stakeholders, such as local communities, NGOs, scientists, governments and private businesses cooperate to manage and develop the area's resources (UNESCO - MAB, 2011a).

3.2.2.3 World Heritage Sites

The UNESCO World Heritage includes natural as well as cultural sites that are considered "to be of outstanding value to humanity" (UNESCO World Heritage Centre, 2008b: 3). World Heritage Sites comprise world-known cultural monuments such as Angkor Wat in Cambodia or the pyramids of Giza in Egypt. The natural sites declared World Heritage include, for instance, the Serengeti National Park in Tanzania or the Canaima National Park in Venezuela (Dudley, 2008: 70).

Although the World Heritage Convention's Operational Guidelines (UNESCO World Heritage Centre, 2008a) do not explicitly state so, virtually all natural World Heritage Sites are also protected areas, and the IUCN is recognized as the official advisory body for natural and mixed natural-cultural sites (Dudley, 2008: 70). Tourism is an important economic activity at many World Heritage Sites and the inscription of a site to the World Heritage List raises public awareness and arguably attracts additional visitors (UNESCO World Heritage Centre, 2008b), although those effects can be somewhat limited in cases where sites were well-established tourist destinations before their inclusion to the UNESCO list, especially as the World Heritage label is probably still less-known to most people than other categories of protection, such as national parks (Wall Reinius and Fredman, 2007: 850).

As of 2013, there are 981 sites registered under the World Heritage List, of which 759 are cultural, 193 natural, and 29 mixed cultural-natural properties (UNESCO, 2013). The SKBR in Mexico, one of the case study areas of this study, was included in the World Heritage List in 1987, one year after its designation (cf. Chapter 4.2.5.1).

3.2.3 Protected areas and the regional economy

Most protected areas categories explicitly allow and actively promote tourism and recreation, which can be important economic factors in otherwise peripheral and often economically weak regions, especially in developing countries. According to the IUCN guidelines, for instance, protected landscapes (IUCN category V) as well as protected areas with sustainable use of natural resources (VI) should, besides their primary protection goal, contribute to local economies through tourism (Dudley, 2008: 20).

Economic benefits resulting from nature-based tourism in protected areas offer a potential compensation to the local population who has to bear the majority of indirect costs resulting from land use restrictions associated with the protection status of a particular area. Local opposition is a common feature in designations of new protected areas, both in industrialized as in developing countries (Job, 2008a: 134; Mayer, 2014: 561). Although offering amenity benefits, such as improved environmental quality and recreation opportunities that also benefit the local population, opposition tends to arise in the absence of tangible, directly measurable economic impacts for local communities (Mayer, 2013: 28-29). Hence, economic benefits accruing from national park tourism, while highly dependent on tourists' disposable income, may facilitate the conservation mission by demonstrating the value of protected areas for people's livelihoods.

The potential economic effects have brought protected areas into the focus of policy makers and social scientists alike. The significant scholarly and political interest notwithstanding, comparatively few quantifications of the economic impact of protected areas exist. "Worldwide," Eagles et al. (2000: 62) state, "there is a low emphasis placed on the collection, compilation, and distribution of coordinated park-use data." A better understanding of visitor structures, expenditure flows, and patterns and economic importance of nature-based tourism products is crucial both for protected area management bodies and local businesses, as spending and subsequent economic impacts may vary considerably between different visitor segments (Eagles and Hillel, 2008: 79-80).

In both case study countries, Mexico and Morocco, the present study is the first attempt to provide comprehensive primary data on visitor numbers, visitor structure, the structure and size of tourist expenditures and the economic impact of different visitor segments and nature-based tourism in selected protected areas in general.

3.2.4 Protected areas as destinations and attractions

Protected areas represent undoubtedly some of the most important destinations for nature-based tourism and ecotourism (Mayer et al., 2010: 73). Relying on a definition by the UNWTO, a destination can be described as "the location of a cluster of attractions and related tourist facilities and services which a tourist or tour group selects to visit or which providers choose to promote" (McIntyre, 1993: 23). This definition can be applied to protected areas, as Weizenegger (2006: 125) points out: protected

areas offer unique attractions (e.g. unspoilt nature, aesthetic landscapes and often rare wildlife), infrastructure and services (e.g. visitor centers or campsites), and are promoted by a variety of actors, such as management bodies, governments, NGOs and private tour operators. Some of the elements mentioned above could play multiple roles, e.g. visitor centers could serve as facilities (e.g. providing restrooms), but also represent attractions themselves (e.g. through exhibitions or souvenir shops). On the other hand, a protected area could also be interpreted as one attraction at a specific destination region: from an organizational perspective (Lew, 1987: 558), attractions can be referred to at different geographic scales, e.g. ranging from a single painting in a museum to a whole country (Leiper, 1990: 368). Lew remarks:

> "[I]t can sometimes be difficult to differentiate between attractions and non-attractions. Transportation (e.g., cruise liners), accommodations (e.g., resorts), and other services (e.g., restaurants) can themselves take on the attributes of an attraction, further complicating the distinction between various segments of the tourism industry." (Lew, 1987: 554)

The aim of this subchapter is to further examine some of the terms mentioned above, and to discuss protected areas' role as destinations and as part of tourist attraction systems.

According to MacCannell (1976: 41), tourism attractions consist of "empirical relationships between a *tourist*, a *site* and a *marker*" (italics in original). Markers are thus defined as informative elements, e.g. information in guidebooks or recommendations from friends, that give meaning to a specific attraction (Fennel, 2008: 3; Metzler, 2007: 16). Leiper (1990: 370-371) draws on MacCannell's definition as well as the earlier work of Gunn (1972), and presents a more general system model of tourist attractions:

> "A tourist attraction is a system comprising three elements: a tourist or human element, a nucleus or central element, and a marker or informative element. A tourist attraction comes into existence when the three elements are connected." (Leiper, 1990: 371)

Accordingly, a "nucleus," the central component of an attraction system, could not only be a physical object (a "sight"), but in fact "*any* feature or characteristic of a place that a traveler contemplates visiting or actually visits," e.g. an object, a person or an event, etc. (Leiper, 1990: 371-372, italics in original). Due to this complexity and the great variety of motivations and information related and available to the visitors of attractions, a large number of potential nuclei exist (Metzler, 2007: 15). Commonly, tourists experience different nuclei during a particular trip. Leiper (1990: 374) refers to such a combination of nuclei as a "nuclear mix." Within a nuclear mix, different nuclei are likely to have different levels of significance to different tourists. For instance, whether a protected area is seen as a destination or as a secondary attraction at a destination depends, besides other influencing factors, on the information available to a specific tourist and his or her touristic motivations and needs. While some tourists book a single vacation trip to a protected area, e.g. a national

park (the national park is the destination), others purchase a *3S* package tour and find out at their destination that a nearby protected area can be visited as part of an organized day trip. The protected area might be the same in both cases, but it would be of different importance to different tourists with different needs and information available.

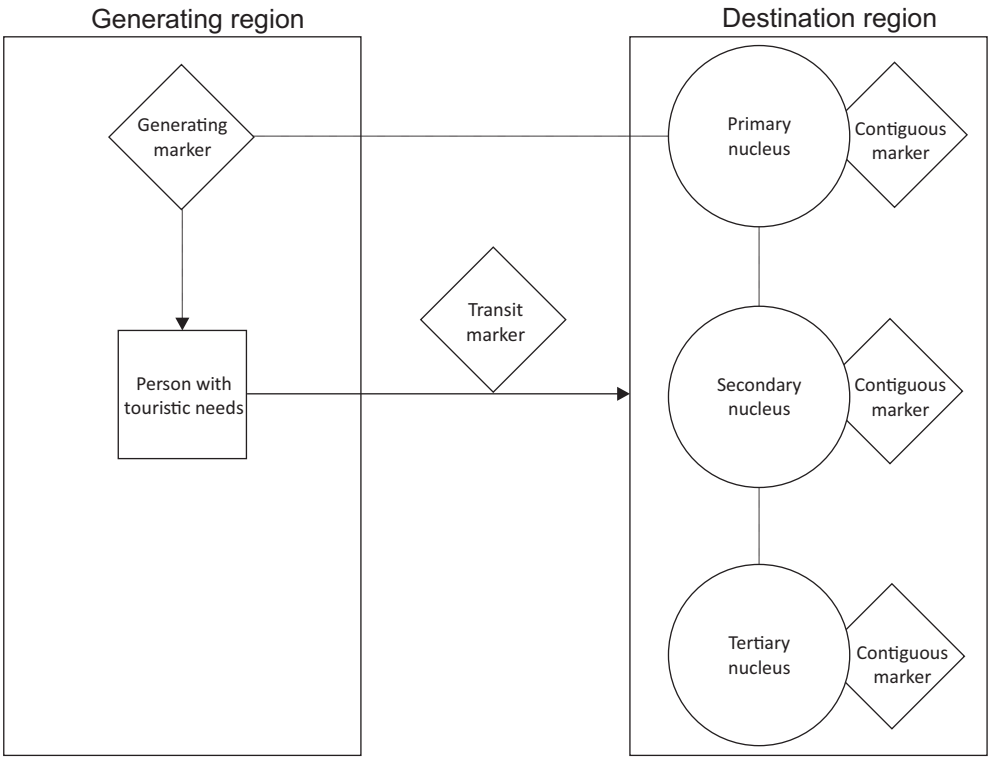
Referring to the two examples above, in the first case, the protected area can be described as a primary nucleus: "an attribute of a place, a potential tourist destination, which is influential in a traveler's decision about where to go" (Leiper, 1990: 374). The latter case is an example of a tertiary nucleus, which is unknown to the tourist prior to the trip, but discovered *in situ* after arriving at a destination region. Secondary nuclei are situated between these two extremes, representing attributes that are known to a tourist pre-visit, but are not considered as significant as to determine choices on destinations or itineraries. Commonly, destination marketing efforts will aim at creating primary nuclei, i.e. informing potential visitors prior to their trip about a place's most important features or characteristics. However, a tourist's pleasure related to the experience of tertiary nuclei should not be underrated, as they involve a "discovery" made by tourists themselves, thus making the tourists explorers in Cohen's (1972: 168) sense of the term (Leiper, 1990: 374). In other words, discovering tertiary nuclei *en route* forms an essential part of the tourist experience (Hwang and Fesenmaier, 2011: 312).

Markers—items of information referring to a particular nucleus—can also be categorized according to functions, roles, and geographical characteristics. In his tourist attraction model, Leiper (1990: 377-379) distinguishes three different kinds of markers. A *generating marker* refers to information received prior to a trip (e.g. media advertisement or information obtained by travel agents). At least one generating marker, related to a primary nucleus, is necessary to motivate people to travel (trip motivation) and to select a particular destination. A *transit marker* refers to information obtained en route (e.g. road signs indicating particular tourist attractions). Generating markers and transit markers are *detached markers*, spatially separated from the nucleus. Finally, *contiguous markers* are situated at the nucleus they are related to (e.g. information received during a guided tour in a protected area). Markers are an important element of an attraction system as they represent a link between tourists and nuclei. According to Leiper, a marker can be a name, and as such it can help identifying a nucleus and distinguishing it from other similar phenomena:

> "Certain names of nuclei have connotations that affect tourists' perceptions of the experiences in prospect. Positive connotation can contribute to the motivation and satisfaction' [of tourists], which is why organizations trying to promote a place often coin new names for it with tourist markets in mind." (Leiper, 1990: 379)

Figure 3-6 depits a model of a tourist attraction system, depicting the roles and functions of travelers (persons with touristic needs), different types of markers and nuclei in the generating region, in transit and in the destination region.

Figure 3-6: Elements of a tourist attraction system



Source: Own drawing adapted from Leiper (1990: 381) and Metzler (2007: 16)

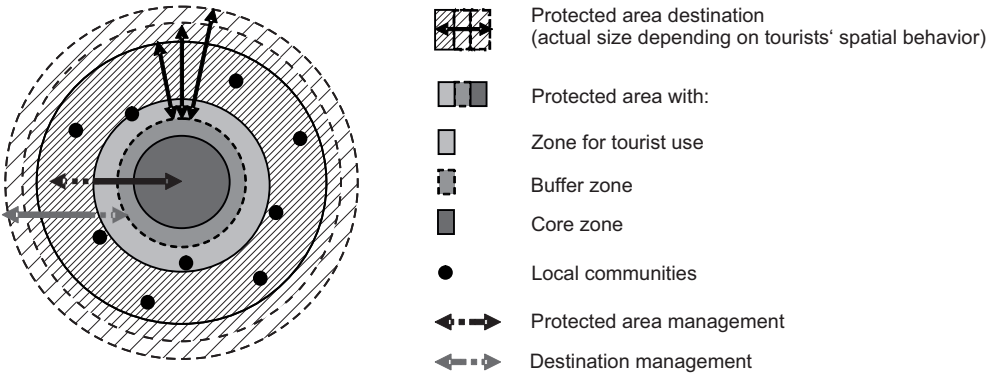
The tourist attraction system described above can be related to nature-based tourism and protected areas. For instance, Wall Reinius and Fredman (2007: 850) suggest that the protection status (e.g. *national park* or *biosphere reserve*) can serve as a marker, and as such make a distinction between a protected area and other unlabeled landscapes. Protected areas, especially well-known categories such as national parks, possess a Unique Selling Proposition (USP) and hence a competitive advantage over other destinations without a national park: officially designated protected areas represent a scarce resource, and the official (national or international) labels are not easily, if at all, transferable and imitable (Hannemann and Job, 2003: 8). For instance, with respect to World Heritage Sites, Shackley (1998: 205) claims that they "possess a symbolic value which may be disproportionate to their size and beauty."

Protected area labels as markers imply positive connotations that can affect tourists' decision to visit an area. As protected areas are often promoted as "must-see attractions" in the media and in tourist guidebooks, their label can serve as a generating marker, and the protected area it is related to can be interpreted as a primary nucleus (Wall Reinius and Fredman, 2007: 580). However, from an organizational perspective, referring to their spatial character, attractions can also represent smaller

objects or zones within a protected area. For birdwatchers, for example, a single spot or even a single species found at a particular spot might represent a nucleus within an attraction system. Thereby, a temporal dimension can be of certain importance too, e.g. when migrating species congregate in certain places during certain times of the year.

However, single attractions or nuclei on a smaller scale, and even many protected areas do not represent operational destinations in terms of marketing. Due to their protection mandate, they lack a sufficient level of necessary tourism infrastructure within their borders (Hannemann and Job, 2003: 8). Certainly, there are differences between particular protected area categories. For instance, a biosphere reserve could typically include more built infrastructure, e.g. accommodation facilities, than a national park. Generally, however, surrounding communities provide some of the touristic functions of a wider protected area destination, namely tourist facilities and services. Hence, surrounding communities should be included and actively participate in the destination marketing, at least to enhance support for a protected area among the local population (cf. Figure 3-7) (Hannemann and Job, 2003: 10; Job et al., 2009: 48).

Figure 3-7: A model of protected area destinations



Source: Translated and slightly modified from Hannemann & Job (2003: 8)

It was argued above that one and the same protected area could represent different categories of nuclei to different visitors, depending on individual touristic needs and/or background information. The next chapter contains an overview of attempts to categorize visitors to protected areas according to various criteria.

3.3 Tourist typologies in nature-based tourism[8]

In Chapter 2.1.4, it was argued that it is increasingly difficult, if not impossible, to develop a classification covering all types of tourists, including "multi-type" tourists and hybrid customers. On the other hand, management bodies are in need of relatively simple tools to segment visitors, identify core groups and improve their marketing. It was noted that the applicability of postmodernist tourist typologies for management purposes was somewhat limited, given their strong emphasis on deconstruction and diversity (Uriely, 2005: 206).

This might be a reason why management-based tourist typologies still tend to focus on rigid criteria (cf. Chapter 2.1.4). This discrepancy has to be considered, not least in relation to protected areas, since protected area management bodies and other institutions engaged in nature-based tourism management and planning need segmentation tools that reflect the reality and complexity of today's nature-based tourism but feature a limited number of variables. Due to scarce resources, including a lack of governmental funding, more and more parks have to market themselves to attract more visitors whose demands for outdoor recreation have to be met (Halpenny, 2007: 278; Job et al., 2009: 158).

As pointed out in Chapter 3.1.3, nature-based tourism and ecotourism have experienced dynamic development, which includes recent mainstreaming tendencies (Wight, 2001). While initially sometimes described as new forms of tourism that emerged as relatively homogeneous niche markets (Poon, 1993), many researchers now point out that natural attractions, such as protected areas, are often visited not only by environmentally conscious individuals but also by a wide range of different types of tourists (e.g. Brenner et al., 2008: 62-64; Ryan et al., 2000: 154). In the light of this increasing complexity, several scholars have proposed nature-based tourist typologies which identify different visitor segments by focusing, for instance, on visitors' motivations and the degree of their commitment to nature protection (e.g. Strasdas, 2006; Weaver and Lawton, 2002).

Strasdas (2006: 60-61), for instance, proposes six different visitor categories in nature-based tourism. He distinguishes visitor segments depending on their commitment to ecology as well as travel motivations: (1) *committed nature tourists*, a small visitor segment that can be related to Weaver's (2001b: 105-106) "hard" ecotourism segment, who are often, besides their admiring of pristine nature, involved in conservation activities; (2) *interested nature tourists* who are informed and concerned about, but not necessarily committed to, ecological interrelationships; (3) *casual nature tourists* who often combine a classic holiday trip (e.g. beach vacations or the classic roundtrip) with a short-time visit to a nearby, easily accessible nature attraction, and are therefore comparable to Weaver's (2001b: 106) soft ecotourists; (4) *nature tourists with specific cultural interests*, who are similar to the types described in (1) and (2) but tend to include cultural elements in their nature-based tourism activi-

8 This chapter is a modified version of a published scientific paper, of which the author of this dissertation was the main contributor (Arnegger et al., 2010).

ties, e.g. traditional indigenous cultures; finally, (5) *sports/adventure tourists*, and (6) *hunting/fishing tourists*, who see nature mainly as a backdrop for their respective activities.

To sum up, as already pointed out above, many protected areas are visited by a wide range of different types of tourists. It could be argued that typologies in nature-based tourism are thus facing the same problems and difficulties as the general tourist typologies described in Chapter 2.1.4. Weaver and Lawton (2002) support this assumption in a study on overnight ecotourist market segmentation. The soft-hard ecotourism continuum was expanded by adding the segment of "structured ecotourists" who show a strong environmental commitment and are prone to take part in physically challenging activities but, on the other hand, demand a higher-than-average level of services, e.g. with respect to their accommodation facilities (Weaver and Lawton, 2002: 273-279). Structured ecotourists can hence be characterized as multi-type tourists who fall into different behavioral categories during one trip.

There is one common feature of the mentioned classifications: they focus on the demand side of ecotourism or nature-based tourism. While it has become somewhat apparent that protected areas are being visited by different types of tourists, less attention has been given to the fact that service providers also form a heterogeneous group of actors (Brenner et al., 2008: 55). In fact, few studies deal explicitly with the specific features of the supply side of nature-based tourism (Higgins, 1996: 11). Nevertheless, some notable exceptions exist (Ingram and Durst, 1989; Sirakaya and McLellan, 1998; Sirakaya et al., 1999), although these tend to focus exclusively on niche market, small-scale businesses offering highly specialized service arrangements for a small number of customers. However, the mainstreaming trend in nature-based tourism and ecotourism identified in Chapter 3.1.3 is not restricted to the supply side. While this niche market has initially been described as a small-scale alternative to Fordist mass tourism, it eventually developed its own packages and infrastructure with larger tour operators catering for higher numbers of casual or soft ecotourists (Ryan et al., 2000: 149; Wheeller, 2006: 342).

Some remote protected areas are still only visited by special tour operators offering customized trips for a very limited number of visitors. There are, however, many parks worldwide that can, with reference to the supply-side-oriented tourist typology proposed by Pearce (2008: 156-157), be easily accessed by independent, customized and package tourists. With respect to protected areas, independent tourists can be described as more experienced travelers who organize their trips entirely on their own. Package tourists tend to visit natural attractions as add-on to classic package tour holidays, usually organized as excursions that are either included in the original package or purchased at the hotel from a catalog of available options provided by their tour operator. Finally, customized tourists often purchase more price-intensive special interest travel experiences, such as fly-fishing or birding. However, the notion of an association between tourists' degree of commitment to nature protection and the organization of their trip (hard ecotourists purchasing customized, small-group tours while soft ecotourists rely on fully standardized mass products) has to be challenged. Today's hybrid customers might purchase various types of ecotourism products sometimes even during one trip. Fully standardized packages

exist that cater especially to the hard segment, while there are also tourists not necessarily committed to nature protection who travel entirely on their own.

3.4 Interim summary

The aim of Chapter 3 was to present and discuss the evolution of the sustainable development paradigm and its application and interpretation in the contexts of nature-based tourism and ecotourism, which were originally often presented as small-scale alternatives to mass tourism development. It was argued that it is difficult to draw such sharp distinctions. By contrast, both nature-based tourism and ecotourism are subject to mainstreaming tendencies, while, on the other hand, mass tourism products are becoming more sustainable, and different markets show an increasing degree of interdependency. Overlapping and distinctiveness between nature-based tourism, sustainable tourism, ecotourism and mass tourism are illustrated in Figure 3-3. Furthermore, this complexity is also embodied in the typologies for nature-based tourists discussed in Chapter 3.3.

Protected areas represent important settings for nature-based tourism and ecotourism. Through their legal status, national parks or biosphere reserves have the potential to become important elements of a tourist attraction system, or destinations on their own. Modern management approaches acknowledge the potential of protected areas to support both conservation and regional economic development by promoting sustainable tourism. However, the increasingly complex tourist structures also pose a challenge for protected area managers and regional tourism planners, notably in regions where protected areas are influenced by the entire mass-alternative spectrum of tourism, such as the SKBR and the SMNP.

Both protected areas are presented in the next chapter, following introductions to the role of state-planned (mass) tourism development in both countries, as well as an analysis of the socioeconomic situation in the two case study regions.

4 Regional contexts: Tourism development, socioeconomic structures and protected areas in the two case study regions

In the following chapters, the SKBR and the SMNP, and their respective socioeconomic and political regional contexts are described and analyzed. Before, a short summary of common and distinctive features of the two case study areas is presented.

4.1 Selecting the two case study regions

The main research questions of this dissertation refer to the potential impact, structurally and economically, of mass tourist bubbles on nature-based tourism in nearby protected areas. The two case study regions—the SKBR in Mexico and the SMNP in Morocco—were thus selected as to represent coastal protected areas in developing countries influenced by Fordist as well as post-/neo-Fordist patterns of tourist production and consumption. While not sharing the same national designation, the SKBR and the SMNP account for major structural similarities that legitimize a comparison, e.g. in terms of the socioeconomic situation both within and outside the protected area, their time of establishment, regional patterns of tourism development, and major threats to the ecology (cf. Table 4-1).

Both protected areas are relatively young and products of recent phases of growing efforts toward biodiversity protection in Mexico and Morocco. Another similarity is the presence of a significant population within their borders: in both cases, several permanent settlements are situated inside the protected area that already existed prior to the designation. This situation creates specific challenges for management bodies. Given that a successful protected area management requires local support, local communities need to be recompensed for use restrictions through new sources of income, e.g. participation in nature-based tourism projects.

Both protected areas are situated on the coast, close to the most important beach resorts of the respective country. Cancún and the Riviera Maya in Mexico, as well as Agadir in Morocco, are the outcome of national tourism strategies implemented in the 1960s with the aim of generating export-based economic growth. The regional tourist structure in both case study areas is marked by a strong emphasis on Fordist or neoFordist patterns of production and consumption, which is expected to have significant influences on nearby protected areas. Not least, it causes comparable threats to ecosystems such as the (in some cases illegal or semi-legal) construction of second-home dwellings and other tourism-related infrastructure in sensible environments and general population pressure.

Table 4-1: General features of research areas

	SKBR	SMNP
Major geographic region	Mexican Caribbean coast/Yucatán peninsula Elevation: 0-20 meters a.s.l.	Moroccan Atlantic coast Elevation: 0-175 meters a.s.l.
Climate	Tropical humid Mean annual precipitation 1,300 mm Mean annual temperature 25.4 °C	Semi-arid Mean annual precipitation < 200 mm Mean annual temperature 18.9 °C
Biomes/species	Mangrove woods Tropical maritime fauna and flora > 100 species of mammals > 300 species of birds 42 amphibian and reptilian species 52 species of fish	Argania spinosa woodland Retama and Euphorbia steppes Dunes, cliffs, sandy beaches Wetlands Cultivated fields > 275 species of birds 46 species of mammals 40 species of reptiles and amphibians
Designated status	Biosphere reserve World Heritage Site Wetland of International Importance (Ramsar Convention)	National park (national category) Wetland of International Importance (Ramsar Convention) Forms part of the Arganeraie Biosphere Reserve (2,560,000 ha)
Year of establishment	1986	1992
Size	617,118 ha (including Uaymil Protected Area south of the SKBR)	33,800 ha
Population density	Very low inside the BR (0.13 inhab./km2); however, the existing population is highly concentrated in the northern coastal area of the reserve Relatively low to moderately high in surrounding areas (Felipe Carrillo Puerto municipality: 5.4 inhab./km2, Tulúm municipality: 13.9 inhab./km2)	Relatively low inside the park (5.6 inhab./km2) Population density in surrounding areas ranging from very high in the north (Inezgane province: 1,432 inhab./km2) to moderate in the south (Tiznit province: 42.0 inhab./km2)
Regional economic structure	Tourism Spiny lobster fishing Commercial spin fishing Subsistence agriculture	Tourism Traditional agriculture, cash crop farming Fishery
Threats	Unsustainable tourism development in northern coastal areas Construction of second homes Groundwater pollution in adjacent urbanized areas	Unsustainable tourism development Construction of second homes, in some cases illegally Intensive agriculture Groundwater level decline

Sources: Bouchaou et al. (2008: 268), Brenner and Job (2012: 5), CHMBM (2011), EOE (2008), Harif et al. (2009: 1-6), Tampieri (2006: 9)

Due to these structural similarities, the two case study areas were selected in order to analyze the tourism structure and regional economic importance of protected areas that are influenced by the adjacent tourist bubble of Fordist mass tourist destinations. As a matter of course, the SMNP and the SKBR also account for some notable differences. First of all, obvious major cultural, political, and historical differences exist between the two countries, Morocco and Mexico. In addition, climate zones and ecosystems also differ. However, as this study aims at comparing tourism structures in coastal protected areas in developing countries or emerging markets in general, specific sociocultural as well as physical geographic features of both regions were considered to play only a minor role in these analyses.

There are also some structural differences between the SKBR and the SMNP, size being among the most obvious: the SKBR is eighteen times larger than the SMNP. Second, despite both protected areas being inhabited, the population density differs significantly and is much higher in the SMNP than in the SKBR. However, while the population density in the SKBR is very low on average, the existing population is highly concentrated in areas of high tourist use in the northern part of the reserve. Third, access policy is different: access to the SMNP is free, while in the SKBR, visitors have to pay an entrance fee and are registered by park rangers at one of the five official access points.

In sum, both case study areas were selected as to represent common structural features as well as a certain degree of diversity. I will now turn to a more detailed analysis of both case study areas, describing patterns of national and regional tourism development, the respective regional socioeconomic structures, and a short overview of the physical geography, human use, and tourism in the SKBR and the SMNP.

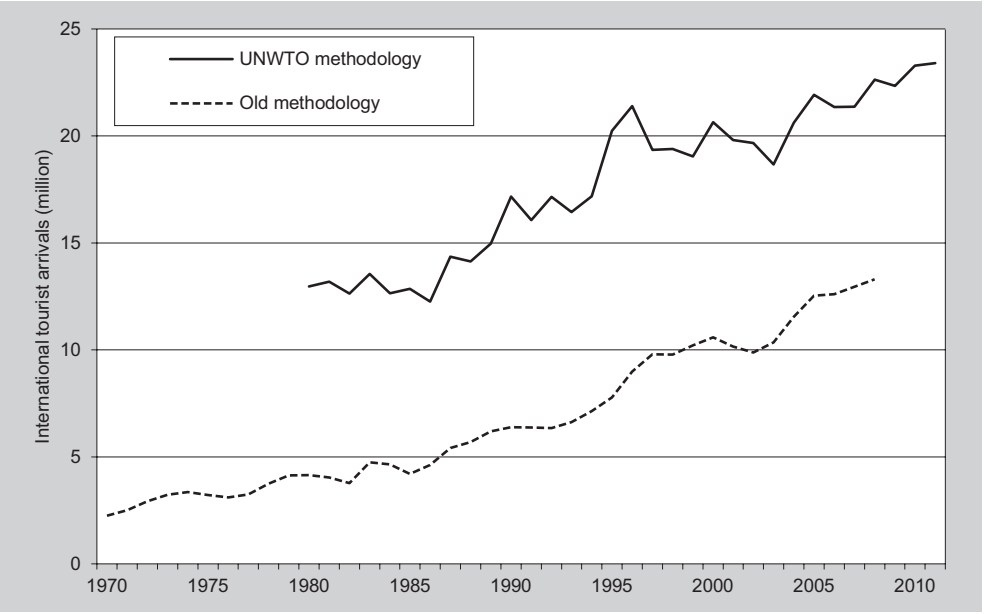
4.2 Mexican case study: regional context

4.2.1 Tourism development in Mexico: historical outline

Mexico, an upper middle income country with a gross national income (GNI) per capita of 9,600 USD in 2012 (The World Bank, 2013), is nowadays one of the world's most important tourism destinations. According to data from UNWTO, the country ranks tenth in international tourist arrivals, with 23.4 million arrivals[9] in 2011 (UNWTO, 2012: 6). Though Mexico's share of international tourism receipts (1.2% of the worldwide market[9]) is less than its share of international tourist arrivals (2.4%[9]), the country is without a doubt a remarkably successful tourism power. The cited data is especially impressive as it reflects a development that took place mainly during the past four decades (cf. Figure 4-1).

9 Provisional data.

Figure 4-1: International tourist arrivals in Mexico 1975-2011[10]



Sources: Vargas Aguayo (1981: 8); Instituto Nacional de Estadística y Geografía (INEGI) (2010a: c. 14.8); UNWTO (2012: 10)

Mexico's rise as a global player in tourism did not come by chance but is mainly the result of a state-driven development strategy that began in the late 1960s; until that time, tourism has been somewhat neglected by Mexican governments (Truett and Truett, 1982: 11). Between 1940 and 1970, policy makers, as in most Latin American countries, focused on Import Substitution Industrialization (ISI) to promote growth and a modernization of the economy. This strategy led to the so-called "Mexican Miracle" of three decades of steady economic expansion, with average annual growth rates of over 6% between 1950 and 1970 (Clancy, 2001: 32-34). During this time, the Mexican economy fundamentally changed from an agricultural base to an industrial one: While in 1940, manufacturing accounted for only 12.7% of the Mexican labor force, this figure increased to 23.0% by 1970. During the same period, the share of the agricultural sector had dropped from 65.4% to 39.4% (INEGI, 2010a: cuadro 5.6). However, the majority of Mexicans (the working class and those living in the rural sector) hardly benefited from the economic growth. Mechanization of the agricultural sector, for instance, led to high migration rates from the countryside and resulted in social problems in overcrowded urbanized areas. Especially during the later phases, the ISI model had become increasingly capital-intensive, and foreign and national investors earned most of the benefits from the economic miracle,

10 In 1980, Mexico adopted a revised methodology for counting international tourist arrivals in accordance with the UNWTO. Previously, international tourists staying in border towns were excluded from the statistics (cf. Clancy, 2001: 11; Vargas Aguayo, 1981: 4).

while the number of jobs created was not sufficient to meet demand. The middle and working classes increasingly called for employment and a more equal distribution of income, and began to question the political regime of the Institutional Revolutionary Party (PRI)[11] which had been ruling in a more or less authoritarian style since the 1930s, a situation that led to strikes and social unrest that culminated in 1968 in the massacre of around 250 protesting students in the barrio of Tlatelolco in Mexico City by governmental police forces. In addition to the social problems, and perhaps of even higher importance to policy makers, the government was increasingly facing the "Achille's heel" of ISI: growing current account deficits (Clancy, 2001: 32-37). It was in 1969 that the Mexican government, together with the central bank, released ambitious plans for heavily investing in tourism facilities with the aim of increasing export revenues and turning the tourism sector into a major job machine (Clancy, 2001: 49-50).

With the exception of the coastal resort of Acapulco, which had faced a very dynamic development since the 1930s and eventually became "the first international resort to have depended primarily on air-borne tourists" (Turner and Ash, 1975: 94), Mexico did not account for tourism destinations of international importance at that time. Acapulco, however, had grown rapidly—and chaotically. By the 1960s, poverty was rising and the city itself as well as the tourist zone lacked necessary infrastructure. Policy makers increasingly saw these conditions as potentially repelling to international tourists and began to search for alternative sites for new resorts (Hiernaux-Nicolas, 1999: 128). After detailed studies that involved helicopter flights over Mexico's coastal areas combined with computer-assisted analysis (state-of-the-art computers were leased for the project from a US provider), a commission consisting of bankers, attorneys, architects and urban planners recommended building five planned coastal resorts: Cancún in the Mexican Caribbean coast of the Yucatán peninsula, Ixtapa on the Pacific coast in the state of Guerrero, Los Cabos and Loreto in Baja California and Huatulco on the Pacific coast in the poor southern state of Oaxaca (Brenner, 2005: 142; Clancy, 2001: 49-50). The five *State-Planned Tourism Destinations* (SPTDs) should increase the inflow of convertible currencies to Mexico, generate jobs and foster regional development in some of the poorest and most marginalized parts of the country such as, in the case of Cancún, the Yucatán peninsula. SPTDs therefore were planned to serve as growth poles creating backward linkages between tourism and other economic sectors that, combined with multiplier effects, should reduce poverty and regional disparities (Torres and Momsen, 2005a: 259). The selection of sites such as Cancún also included geostrategic considerations, as the government feared that impoverished and peripheral Quintana Roo (which was the last Mexican state to be granted statehood as late as 1974), with no prospects for economic development, might face indigenous uprisings and political instability (Hiernaux-Nicolas, 1999: 129).

The main state agency for tourism development is the National Fund for Tourism Promotion (FONATUR)[12], created in 1974[13]. FONATUR was in charge of the

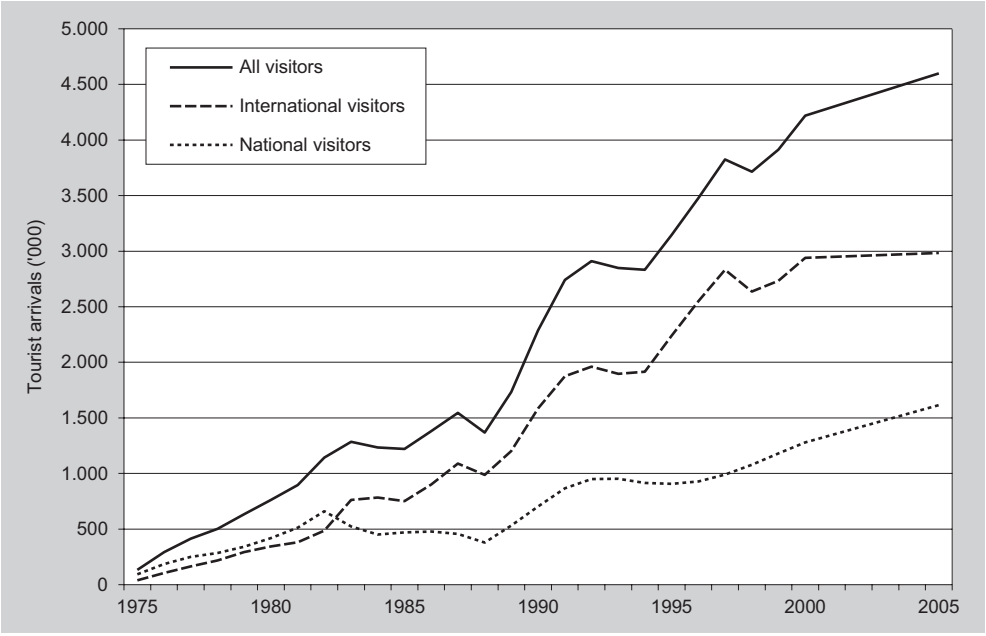
11 In Spanish: Partido Revolucionario Institucional

12 Original in Spanish: *Fondo Nacional de Fomento al Turismo*

13 FONATUR is the successor of two earlier institutions, FOGATUR (Tourism Guarantee and Promotion Fund) and INFRATUR (National Trust Fund for Tourist Infrastructure) (cf. Clancy, 2001: 56).

construction of high-quality hotels, the coordination of spatial planning, granting loans to both national and foreign investors, acquiring, leasing and selling real property, and the provision of infrastructure, such as international airports or sewer and water facilities at SPTD sites (Brenner, 2005: 510; Torres and Momsen, 2005a: 265). FONATUR's success is often measured in numbers of tourist arrivals: in 1975, one year after the creation of Cancún, the first SPTD, 133,000 tourists visited this new beach resort in Quintana Roo. In 2005, 4.6 million visitors were registered in all the SPTDs, 64.9% of whom were international travelers (cf. Figure 4-2) (FONATUR, 2010). According to official statistics, tourism accounted for 7.5% of Mexico's GDP in 2011 (however, this figure reflects a slight downturn since 2000, when tourism's share in the total GDP was 8.4%) (INEGI, 2006a: 53; 2013: 31).

Figure 4-2: Tourist arrivals in Mexican SPTDs, 1975-2005[14]



Source: FONATUR (2010)

Today, Cancún is Mexico's most important destination for international tourists, before the traditional beach resort of Acapulco and the capital Mexico City. In 2005, more than 3 million tourists visited Cancún, of which 2.1 million were international tourists (67%). Cancún thus still accounted for 66% of the total visitor number in all Mexican SPTD, or 77%, if only international visitors are taken into account (FONATUR, 2010).

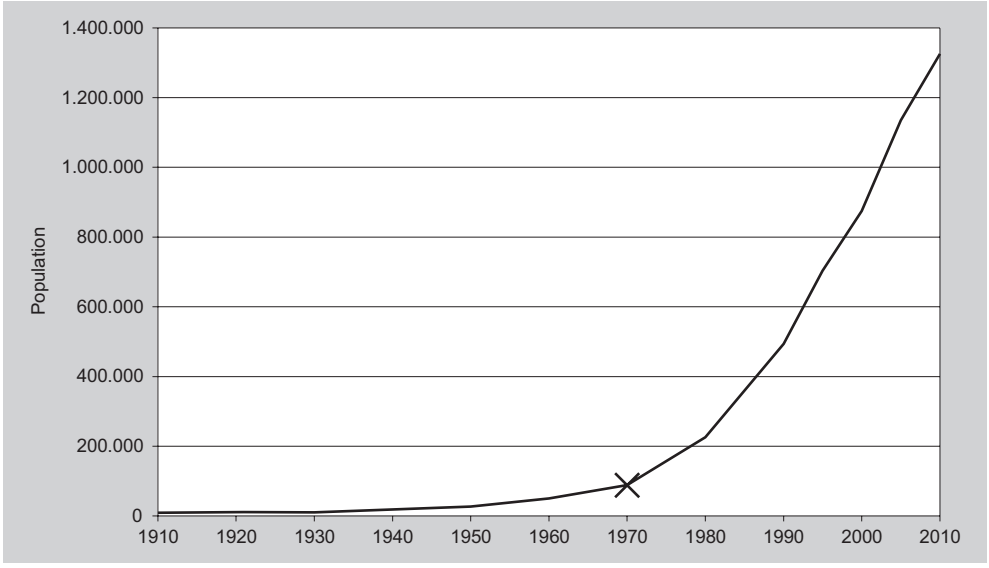
14 Note that missing values (2001-2004) are interpolated.

4.2.2 Socioeconomic profile of Quintana Roo

During the second half of the 19th century (1847-1901), today's Quintana Roo, where the SKBR is situated, was the stage of the so-called Caste War between the indigenous Mayan population and the rulers of European descent. Chan Santa Cruz, today known as Felipe Carrillo Puerto, was the center of the revolt and is still the most important town of central Quintana Roo, the Mayan heartland (Reed, 1964) (cf. Map 4-1).

Even after the Mexican army's victory against the insurgents, Quintana Roo was considered for many decades "one of the most remote, underdeveloped, 'savage' and isolated corners of Mexico," and was thus considered a "double periphery" (Torres and Momsen, 2005a: 266). The population was less than 10,000 at the beginning of the 20th century, and even in 1970 (the start of the creation phase of Cancún) official statistics registered only 88,150 inhabitants. This figure increased dramatically to over 1.3 million inhabitants in 2010 (cf. Figure 4-3). During the same period, population density (which was among the lowest in the country in 1970 with only 1.8 inhabitants per square kilometer, compared to a national average of 24.5), increased to 30.0 inhabitants per square kilometer in 2010 (INEGI, 2013).

Figure 4-3: Population development of Quintana Roo, 1910-2010 ("X" marks the beginning of the creation phase of Cancún).



Source: INEGI (2010a: c. 1.41; 2013)

Notably, the region of Cancún, once sparsely-populated by an indigenous Maya population living on subsistence agriculture and fishing, has been transformed into a "consumption space for millions of foreign tourists" with a booming tourism economy attracting immigrants from rural parts of the state as well as from other re-

gions of Mexico and beyond (Torres and Momsen, 2005a: 266). In 1970, before the beginning of the resort development of Cancún, 53.5% of Quintana Roo's labor force was working in the primary sector. This figure dropped to 19.6% in 1990 and then declined further to 5.4% in 2008. Therefore, the agricultural sector in what used to be one of the most rural states of Mexico is now of less importance than on nationwide average, for which figures decreased from 39.4% in 1970 to 13.1% in 2008 (INEGI, 1971: 93; 1990; 2009a; 2010a: 5.9, 5.11). The resort development of Cancún and the advent of mass tourism had also significant consequences for the spatial distribution of population in Quintana Roo. In 1970, Chetumal, the state capital of Quintana Roo, was the only city of significant size, registering 23,685 inhabitants or 26.9% of the total population (INEGI, 1971: 7). However, during the following decades, Cancún's tourism-based growth clearly outperformed Chetumal. In 2005, the city of Cancún had 526,701 inhabitants, 46.4% of Quintana Roo's population and nearly four times the figure of Chetumal (136,825) (INEGI, 2006b).

In 1970, the whole Yucatán peninsula, consisting of the states of Yucatán, Campeche and Quintana Roo, was considered an "economically depressed region" (Eastmond et al., 2000: 64). GDP per capita was 1,906 pesos, only 59.2% of the national average of all Mexican states at that time. The dominant primary sector was not competitive on the national and even less on the international level (García de Fuentes, 1979, as cited in Eastmond et al., 2000: 64). Quintana Roo's economy, however, experienced a boom between the start phase of Cancún's development and the economic crisis in 1984, with annual average growth rates of 20.3% between 1970 and 1975, and 15.0% between 1975 and 1980, outperforming both the national average and the neighboring state of Yucatán (cf. Table 4-2).

Table 4-2: Compound annual growth rates of GDP in Quintana Roo and Yucatán compared to the national average

	Compound annual growth rates of GDP (in %)				
State	1970-75	1975-80	1980-85	1985-88	1988-93
Quintana Roo	20.3	15.0	4.3	9.5	15.2
Yucatán	8.7	5.2	2.9	0.9	4.0
Mexico (national)	6.6	6.7	2.9	-0.2	2.9

Source: Peña et al. (2000: 110, compiled after INEGI census data)

Table 4-3: Share of the states of Quintana Roo and Yucatán in the national GDP

	Share in national GDP (in %)							
State	1970	1975	1980	1985	1993	1995	2000	2004
Quintana Roo	0.18	0.34	0.40	0.51	1.29	1.23	1.40	1.64
Yucatán	1.13	1.37	1.13	1.11	1.30	1.24	1.39	1.41

Source: INEGI (2010c)

Between 1970 and 1980, Quintana Roo's GDP grew even faster than the number of its inhabitants—an astonishing performance given the population growth depicted in Figure 4-3. This is also reflected in an increase of Quintana Roo's share of the national GDP from a marginal 0.2% in 1970 to 1.6% in 2008 (cf. Table 4-3).

The share of different economic sectors' relative contributions to the GDP of Quintana Roo also changed considerably. The primary sector, which accounted for one-third of Quintana Roo's total GDP in 1970, has lost almost all importance (economically speaking, at least). During the same time, tourism expanded rapidly, and the hotels and restaurants sector, together with commerce, now accounts for half of the state's GDP approximately. As compared to services, namely tourism, the relative importance of manufacturing to Quintana Roo's economy is still relatively low (cf. Table 4-4).

Table 4-4: Importance of economic sectors in Quintana Roo, 1970-2006

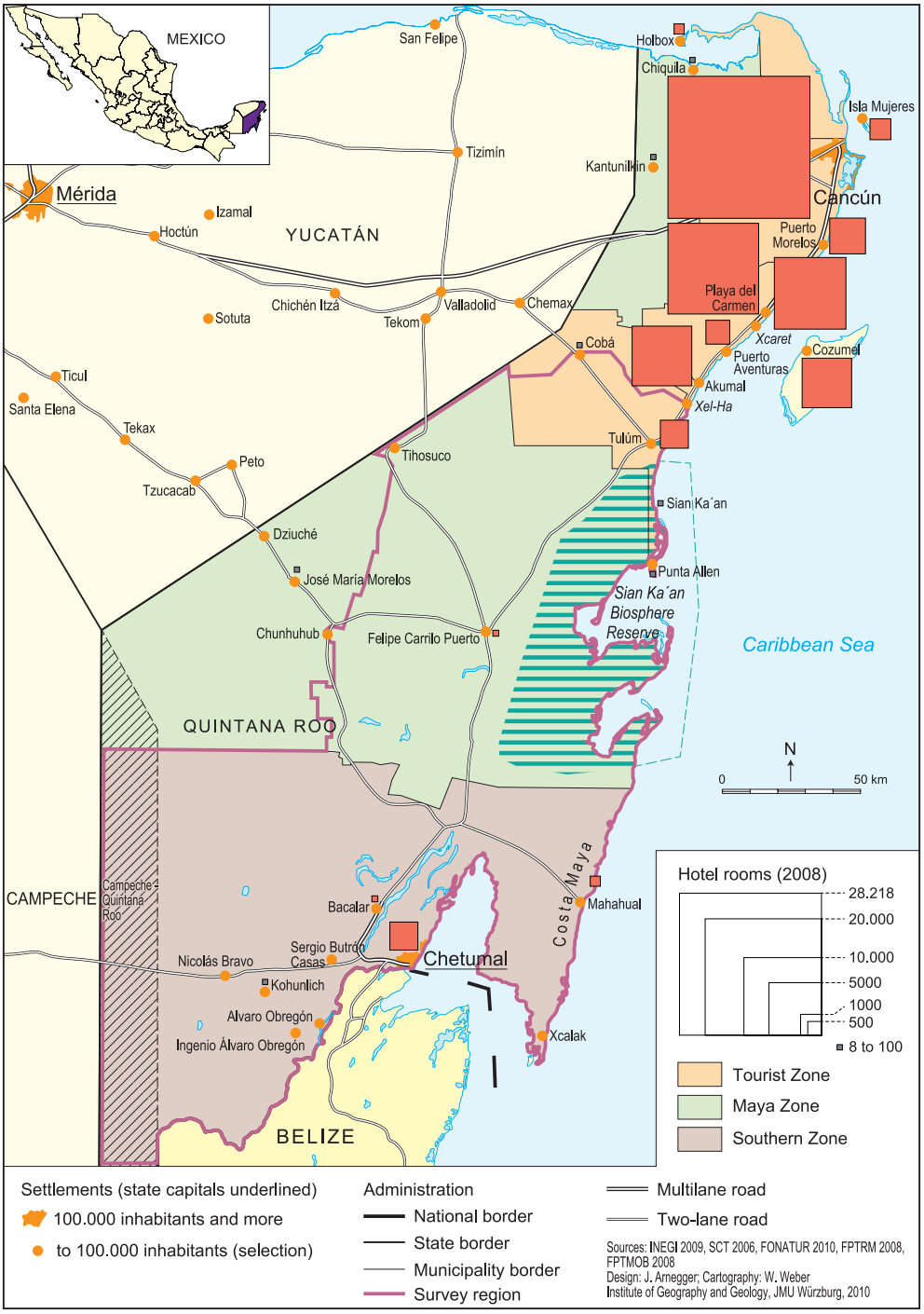
	Share in the GDP of Quintana Roo (in %)								
	1970	1975	1980	1985	1993	1995	2000	2004	2006
Agriculture, forestry, fishing	33.6	12.9	6.9	8.5	1.9	1.3	0.9	0.8	1.2
Mining	0.1	0.3	0.3	0.6	0.4	0.4	0.3	0.2	0.3
Manufacturing	8.0	4.1	3.2	5.7	3.3	2.5	2.5	2.2	2.7
Construction	6.4	25.8	6.5	4.3	2.6	2.2	3.0	2.8	2.8
Energy, gas, water supply	0.5	0.5	0.9	0.5	0.6	0.5	0.4	0.4	0.6
Trade, hotel and restaurants	22.9	28.8	52.2	49.8	54.3	53.0	53.6	53.9	47.5
Transport and communication	3.2	4.5	7.9	7.9	8.9	10.6	9.7	8.3	10.1
Financial services, insurance, real estate	9.8	6.5	4.8	6.0	11.2	14.0	12.0	12.9	19.5
Public and private services	16.2	17.0	17.8	17.3	18.3	17.9	18.2	18.9	17.1
Other banking services	-0.5	-0.4	-0.4	-0.5	-1.4	-2.3	-0.5	-0.3	-1.8

Source: INEGI (2010c). Data after 2006 is hardly comparable due to a change in the methodology (sectoral classification)

These figures confirm a "180-degree turn" (Moncada Jímenez, 2007: 24) of Quintana Roo's economy, and the deep structural changes initiated by the federal tourism policy. However, they veil some evident negative consequences of the tourism boom. Quintana Roo is still marked by extreme regional disparities. As Torres and Momsen (2005a: 272) point out, scholars and planners distinguish three different zones within the state of Quintana Roo: the highly urbanized and dynamic Tourist Zone along the Cancún-Tulúm coastal corridor, the rural Mayan Zone, home of the majority of Quintana Roo's Maya population, and the Southern Zone around the state capital of Chetumal (cf. Map 4-1). The Tourist Zone consists of the municipalities of Benito Júarez (Cancún), Isla Mujeres, Cozumel, Solidaridad, and Tulúm[15].

15 The municipality of Tulúm is the youngest in Quintana Roo, created in 2008, when Tulúm was separated from Solidaridad.

Map 4-1: Quintana Roo with depiction of relevant places



The Maya Zone includes the municipalities of Lazaro Cardenas in the north, as well as Felipe Carrillo Puerto and José María Morelos in the center of Quintana Roo. The Southern Zone consists of only one municipality, Othón P. Blanco.

A comparison of infrastructure and socioeconomic data shows marked regional inequalities between the three zones (cf. Table 4-5). The Tourist Zone is the core of Quintana Roo's economy, with a high concentration of capital, infrastructure and inhabitants, and high average levels of income and education among its mostly urban population. However, inequalities also exist within the Tourist Zone, as evidenced by large and growing shantytowns on the peripheries of cities like Cancún or Playa del Carmen, inhabited by immigrant workers from other Mexican states or more rural parts of Quintana Roo (Torres and Momsen, 2005b: 331, 333). Shantytowns, also known as *Colonias*, are spatially segregated from the clean, glittering tourist bubbles of the resort towns. In fact, Colonias, "the 'ugly' side of tourism," represent parts of the Tourist Zone's landscape outside the tourist bubbles "that tourists almost never see" (Murray, 2007: 348).

Three of the four biggest cities in Quintana Roo are located within the Tourist Zone: Cancún (628,306 inhabitants in 2010), Playa del Carmen (149,923 inhabitants), and Cozumel (77,236 inhabitants). While the Southern Zone also accounts for an important agglomeration (the state capital of Chetumal with 151,243 inhabitants), the Maya Zone's biggest city, Felipe Carrillo Puerto, is considerably smaller (25,744 inhabitants) (INEGI, 2010b). In 2010, 60.9% of the tourist zone's inhabitants were born outside of Quintana Roo—evidence for the region's demographic dynamic.

By contrast, the Maya Zone can be described as a "triple periphery" (Torres and Momsen, 2005a: 272-273), referring to its disadvantaged position within Quintana Roo, the former "double periphery." The majority of Quintana Roo's indigenous population lives within the marginalized and rural Maya Zone. 60.9% of the population speaks an indigenous language (which is, in almost all cases, Maya). So far, this zone could only partly benefit from the economic development in other parts of the state. In contrast to the north, the average education level is considerably lower, and there is a lack of infrastructure (e.g., in 2010, 22.3% of households did not have a toilet; cf. Table 4-5). Many young people leave the zone in the hope to find work in the tourism sector in the north of the state (Sosa Ferreira, 2011: 41). Murray (2007: 347) concludes: "In a sense, the Mayan area has become a marginalized periphery of the north, a source of cheap labor and raw materials."

Socioeconomic indicators for the southern zone are between those of the two extreme poles of the two other regions. Demographically and economically, the south is marked by the state capital of Chetumal and its administrative functions, as well as trade with neighboring Belize. The commerce sector in Chetumal traditionally benefited from the city's duty-free port status. However, this advantage was lost due to due to liberalization policies enacted since 1986, when Mexico acceded to the General Agreement on Tariffs and Trade (GATT) (Peña Chapa et al., 2000: 113). The primary sector is not as important in the Southern Zone as compared to the Maya Zone, but it benefits from more favorable physical geographic conditions and the region accounts for most of the state's (limited) commercial agriculture (Torres and Momsen, 2005a: 275).

Table 4-5: Selected socioeconomic indicators for Quintana Roo

Socioeconomic indicators for Tourist, Maya, and Southern Zone				
	Tourist Zone	Maya Zone	Southern Zone	Quintana Roo
Population (2010)	944,487*	136,538	244,553	1,325,578
% of state population (2010)	71.3	10.3	18.4	100.0
Population density (inhabitants/square kilometer; 2005)	103.8	4.9	11.7	22.3
% of population without education (15 years or older; 2010)	3.8	11.1	7.6	5.2
% of the population born outside of Quintana Roo (2010)	60.9	23.3	36.9	52.6
% of the population over three years old that speak an indigenous language (2010)	11.4	60.9	9.5	16.2
% households without toilet (2010)	5.6	22.3	3.8	6.7
% of workforce employed in agriculture (of total workforce; 2000)	1.9	51.9	19.7	10.5
% of state gross product generated (2009)	85.0	2.0	13.0	100.0

Sources: INEGI (2000; 2006b; 2009b)
* Exact population numbers for the Tourist Zone are not available, as the constant flow of migrants from rural parts of Quintana Roo and other parts of Mexico is difficult to quantify. The governmental institutions in charge with infrastructure and spatial planning already drew on a working estimate of ca. 1 million inhabitants in the Tourist Zone in 2005 (Torres and Momsen, 2005a: 280).

This detailed examination of the socioeconomic development patterns in different regions of Quintana Roo revealed that the state-led expansion of the tourism industry, despite Cancún's projected role as a growth pole, failed in creating backward linkages to other economic sectors such as agriculture or manufacturing. Regional economic development is therefore highly uneven, and intraregional disparities have grown rather than decreased since the 1970s (Torres and Momsen, 2005a: 279).

Even for low-skilled workers, earnings in the tourism industry are about twice as high as in agriculture, which is why many families from the periphery of Quintana Roo decide to send one or more (in most cases male) family members to work, permanently or temporarily, in the Tourist Zone, who in turn send home parts of their income. This tourism-driven migration not only results in lower production in the agricultural sector due to labor shortages, but also deeply alters family and labor structures, gender relations and land use patterns (Torres, 2003: 556; Torres and Momsen, 2005b: 330). It has to be stated that well-paid management jobs in tourism are generally unreachable for unskilled migrants from the poorer rural regions of Quintana Roo and other states, and are instead occupied by well-educated middle and upper class Mexicans from other parts of the country or by expatriate managers from abroad (Hiernaux-Nicolas, 1999: 138).

Cancún is described as "very much a product of 1960s development thinking, including its stress on massive investment and large-scale construction" (Pi-Sunyer et al., 1999: 18), and its developers hoped that this large-scale SPTD would automati-

cally create backward linkages to other sectors of the economy through trickle-down effects, spreading development and reducing poverty in rural communities (Mowforth et al., 2008: 83, 177). Governmental projects to develop, diversify, and modernize the regional agrarian sector were, with some exceptions, "poorly financed, small-scale, limited in duration and lacking in resolve" (Torres, 2003: 549).

Therefore, on a national scale, state-planned tourism development certainly helped reducing interregional disparities in Mexico, transforming Quintana Roo from a laggard region to an economically important state. On a regional scale, however, inequalities have not disappeared but in some ways intensified.

4.2.3 Spatiotemporal development of tourism in Quintana Roo

In this section, spatiotemporal tourism development in different tourist areas of Quintana Roo (Cancún, Riviera Maya, *Costa Maya*) during the past four decades will be described with reference to the models presented in Chapter 2.2, especially Butler's (1980; 2006a; 2006b) TALC concept.

The opening of the first hotel in Cancún in 1974 marks the advent of Fordist mass tourism development in Quintana Roo. However, tourism in the region existed before Cancún, especially on the islands of Cozumel and Isla Mujeres. Cozumel, for instance, accounted for ca. 300 hotel rooms in 1970 and attracted 36,300 international tourists and 24,200 national visitors. Nevertheless, only the "most adventurous, 'alternative' travelers" (Torres and Momsen, 2005a: 267) would visit these destinations, as they lacked modern infrastructure and accommodation capacity, and were truly "off the beaten path." Until the 1970s, the whole region was largely untouched by institutionalized mass tourism developments and could be situated somewhere between Vorlaufer's (1996: 197) "initial" and "expansion" phases (cf. Chapter 2.2.2).

4.2.3.1 Cancún

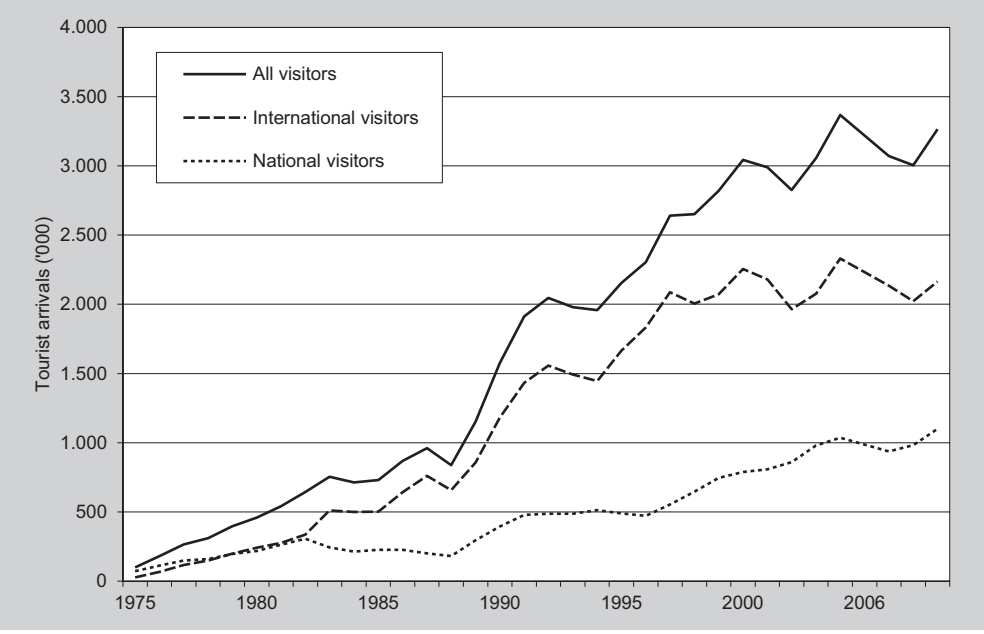
Cancún is the prototype of an "instant resort" where the exploration and involvement phases of the TALC are of little importance (Butler, 1980: 10). Therefore, the founding of Cancún, non-existing before FONATUR and its institutional predecessors began their activities around 1970, had more far-ranging consequences than typical "critical events" in resort development, like the opening of a "pioneer hotel" with a higher-than-local standard, or an international airport (Johnston, 2001a: 16). In the case of Cancún the whole resort has been planned from scratch, as pointed out in Chapter 4.2.1. Its fast planned expansion as a resort also deeply affected the whole region, which means that nearby (younger) resorts probably did not follow the ideal pattern of the TALC as well but also experienced a significantly faster development.

Cancún, the instant resort, skipped the exploration and involvement phases of the TALC, starting from scratch at the development stage. Torres (2000: 166-167) situates Cancún between the development and stagnation stage and names ecological degradation as one of the main indicators for this assumption. The ecosystem in and around Cancún is increasingly and visibly damaged by unsustainable tourism development in the hotel zone, the tourist bubble on the 14-kilometer-long island

of Cancún, and unsustainable and uncontrolled urban growth of the city of Cancún on the mainland (e.g. Pérez Villegas and Carrascal, 2000: 154-164). Ecological degradation is a strong indicator of (future) stagnation or decline, as it implies a loss of attractiveness for tourism destinations and may lead potential visitors to choose alternative locales (Weizenegger, 2003: 44). Taking into consideration spatiotemporal patterns of tourism development in Quintana Roo, this process is already showing its effects on the SKBR.

Visitor numbers for Cancún suggest that the resort can be situated within the stagnation phase, as the continuous increase halted during the last decade. By contrast, compound annual growth rates were 20.2% between 1975 and 1990, and 6.8% during the 1990s (cf. Figure 4-4)[16].

Figure 4-4: Cancún visitor numbers, 1975-2008



Sources: 1975-2005: FONATUR (2010); 2006-2008: INEGI (2008; 2009a)

In Butler's TALC model, growth rates decline while absolute visitor numbers are still increasing when a destination enters the consolidation stage. However, the curve depicted in Figure 4-4, which shows resemblance to the TALC's ideal curve

16 The drops in visitation numbers in 1988, 1993-1994, 2002 and 2007 can be related to single events. In 1988, hurricane Gilbert hit Cancún and other coastal areas in Quintana Roo; the years of 1993 and 1994 were marked by political instability such as uprisings of the "Army of National Liberation" (EZLN) in the state of Chiapas, and the murder of presidential candidate Luis Colosio of the PRI (Cothran and Cothran, 1998: 484). The decrease in 2002 is certainly a reaction to the terrorist attacks in the United States on September 11, 2001, which led to a general and significant global decrease in tourism, and the decrease after 2007 is related to the global financial crisis that began in summer of the same year.

(cf. Figure 2-2, Chapter 2.2.1), suggests that Cancún already entered the stagnation stage, i.e. the point when, according to Butler (1980: 8), "the peak number of visitors will have been reached." The situation with regard to the hotel capacity is comparable (cf. Figure 4-5).

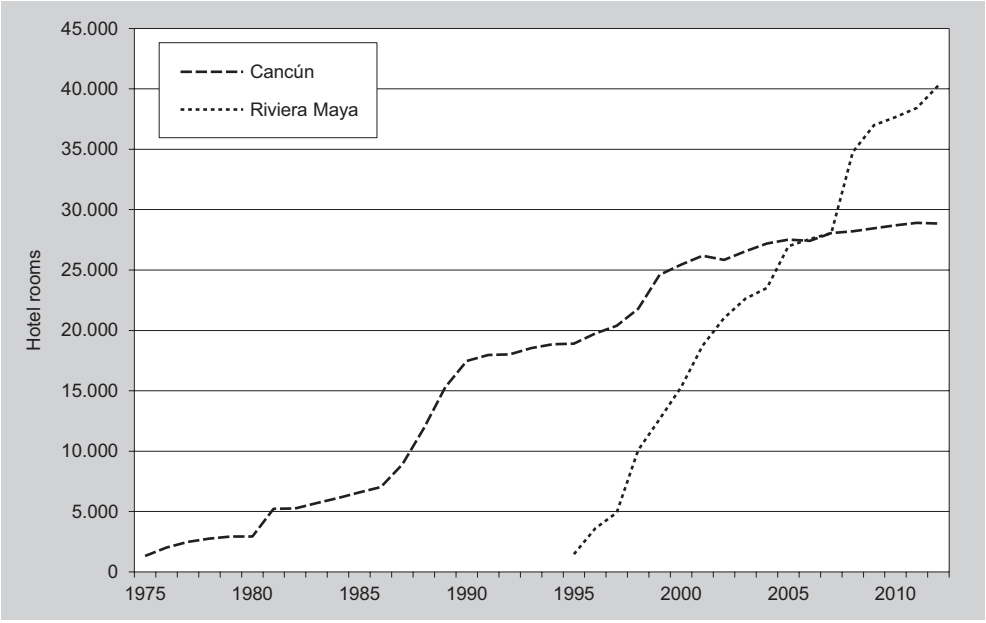
There are other indicators supporting this assumption. Two of these are the high number of tourists relying on bargain all-inclusive packages, an option that is often chosen by hotels to fill excess capacities, and, in accordance with Butler (1980: 8), a "heavy reliance on repeat visitation." A study by Torres (2000: 166-175) among a random sample of 615 visitors at Cancún International Airport revealed that 53% had booked a package tour (of which 45% arrived on all-inclusive packages), and a share of 40% of repeat visitors.

Even for non-package visitors, price is one of the main competitive factors. As Torres (2000: 169) puts it: "In Cancún it is virtually impossible to avoid a bargain." On average, visitors in Cancún spent USD 111 per day in 2000—the lowest figure of all Mexican SPTDs. In Huatulco, for instance, the newest SPTD, daily expenses were almost four times as high as in Cancún (Torres, 2000: 175). Hence, Cancún, considered "an expensive, exclusive, and exotic playground for the rich and famous" in the 1970s (Torres and Momsen, 2005b: 315), also in this sense resembles a stagnating destination that accounts for "a well established image" but is "no longer […] in fashion" (Butler, 1980: 8).

There are also new developments "peripheral to the original tourist area" (Butler, 1980: 8), namely the coastal strip between Cancún and Tulúm known as the "Riviera Maya," which experienced an even more accentuated growth since the mid 1990s and recently surpassed Cancún in terms of accommodation facilities (cf. Figure 4-5). Within the Riviera Maya there are some of the region's major tourist attractions, e.g. the "eco-archeological theme parks" *Xcaret* and *Xel-Ha*—commodified nature-based and cultural tourism experiences offered as standardized, risk-free, mcdonaldized packages for the mass market. Xcaret and Xel-Ha offer different kinds of aquatic activities such as snorkeling, scuba diving or swimming with dolphins, and both count with original Mayan archeological sites within their properties. Xcaret also features other cultural attractions such as the recreation of a Mayan village and performances of the pre-Hispanic ball game or *voladores de Papantla*[17]. Xel-Ha and Xcaret charge USD 79 and USD 99, respectively, for a one-day all-inclusive ticket. Although situated within the Riviera Maya, both parks are easily accessible from Cancún, and tourists staying in Cancún hotels can choose from a variety of packaged day trips to these (and many other) attractions. Despite the rather high entrance fees, Xel-Ha and Xcaret are visited annually by over 700,000 and 1,000,000 visitors respectively, and these locales seem to represent "artificial facilities" that superseded natural and genuine cultural attractions—which can be, according to Butler (1980: 8), interpreted as an indicator for tourist destinations in a stage of stagnation. However, new post-Fordist and neo-Fordist patterns of tourism development (e.g. golf courses or the rise of packaged nature-based tourism) are also indicating toward a potential for diversification and rejuvenation.

17 *"Papantla flying men"*

Figure 4-5: Number of hotel rooms in Cancún (1975-2012) and the Riviera Maya (1995-2012)



Sources: FONATUR (2006); Fideicomiso para la Promoción Turística de la Riviera Maya (FPTRM) (2006), Secretaría de Turismo del Estado de Quintana Roo (SEDETUR) (2013)

4.2.3.2 Riviera Maya

While situating a tourist destination at an exact position within the TALC proves difficult (cf. discussion of the concept in Chapter 2.2.1), it seems reasonable to assume that Cancún is situated somewhere within the stagnation phase. Comparing Cancún's position within the destination life cycle with the one of the Riviera Maya is somewhat problematic, mainly because the latter extends over a far greater area. Unlike Cancún, the instant resort, the Riviera Maya consists of several resort towns along the 100km coastal corridor between Puerto Morelos and Tulúm, including some former fishing villages that experienced rapid, spontaneous and uncontrolled tourism-based growth since the 1990s (e.g. Playa del Carmen, Akumal, and Tulúm). However, the Riviera Maya also includes (privately, not state-based) planned tourism developments, namely five-star hotels designed as mega-resorts such as *Barceló Maya Beach Resort* or *Bahía Príncipe* with capacities of 1,500 respectively 2,500 hotel rooms. Around 63% of all Riviera Maya hotel rooms are marketed as all-inclusive packages, and ca. 85% of all tourists book an all-inclusive option (Tampieri, 2006: 35).

Those indicators would suggest a Fordist mass tourist destination in the stagnation stage—similar to Cancún. However, the ongoing growth of hotel capacities (6.7% compound annual growth rate between 2002 and 2012; cf. Figure 4-5) indicates potential for further development. Furthermore, the Riviera Maya's young history as a mass tourist destination—in 1995, only 51 hotels with a capacity of 1,450 rooms

existed—also suggests an earlier position within the TALC as compared to Cancún (FPTRM, 2006).

A more detailed analysis of the Riviera Maya reveals differences in development patterns, notably between spontaneously grown towns like Playa del Carmen or Tulúm and planned mega-resorts. Playa del Carmen's hotel industry, for instance, can be characterized as small-to-medium scale, with 35.6 rooms per hotel, especially as compared to Cancún, where the average size of hotels is considerably larger with 201 rooms on average in 2008 (FPTRM, 2008; Mora Flores and Moncada Jímenez, 2008: 3). Tulúm, further south, is still marked by a small-scale hotel structure and private ownership, which indicates an even earlier stage of the TALC. Tulúm's small hotel zone along the coast between the archeological site of Tulúm and the northern border of the SKBR includes hotels of different standards, from simple beach *palapas* (beach shacks) to luxurious ecolodges. In 2006, the 53 small hotels in Tulúm accounted for 885 rooms, an average of only 17.3 per hotel (in addition, 350 rooms were concentrated in two all-inclusive resort hotels) (Gobierno Municipal de Solidaridad Q.R., 2007: 74). However, an official development plan for Tulúm presented in 2007 projects to significantly increase hotel capacity to 18,798 by 2030—11 times as much as in 2008 (Gobierno Municipal de Solidaridad Q.R., 2007: 178). Hence, until now, Tulúm still seems to be situated within the development stage.

Situating the Riviera Maya within the TALC model is a more difficult task than in the case of Cancún. The high growth rates and official projections (e.g. the Tulúm development plan mentioned above), however, indicate a position within the development stage. While some destinations, especially in the northern Riviera Maya closer to Cancún, show signs of consolidation, there are still no such indications in the southernmost area of the Riviera Maya around Tulúm.

4.2.3.3 Costa Maya

The "Costa Maya" (a marketing term for tourism promotion, comparable to the Riviera Maya in the north) is the coastal strip between the SKBR in the north and Xcalac close to the Belizean border in the south, a distance of approximately 100 km (cf. Map 4-1). Although by no means untouched by international tourism, there are, until now, less and different tourism infrastructure developments than in the northern part of Quintana Roo (Smith, 2009: 9). Tourism development in the Costa Maya has received far less attention from tourism researchers than the region around Cancún. Notable exceptions include a recent article by Meyer-Arendt (2009) describing the evolution of the Costa Maya's touristic landscape, as well as a PhD dissertation on the recent demographic development of Mahahual (Sosa Ferreira, 2011).

Before the development of Cancún as a tourism growth pole on the northern Mexican Caribbean coast, the southern zone around the state capital of Chetumal was Quintana Roo's economic center, based on state bureaucracy, trade and, to a limited extent, commercial agriculture, as pointed out in Chapter 4.2.2. The Costa Maya is not as easily accessible from Cancún International Airport as the Riviera Maya: Mahahual, the Costa Maya's main settlement, is about 330 road kilometers (or five hours travel time) south of Cancún. The SKBR, established in 1986, represents a barrier for tourism development expanding from the north (Meyer-Arendt, 2009: 2).

The Costa Maya's only towns of significant size are Mahahual, the nearest beach access from the hinterland, and Xcalak in the south, close to the Belizean border. However, both settlements are small[18] compared to the resort towns in the Tourist Zone. Not surprisingly, the only remaining section of the Mexican Caribbean Coast so far unspoiled by mass tourist infrastructure did not remain unnoticed by developers. However, given some of the negative outcomes of the large-scale state-planned development at Cancún and the spontaneously and chaotically growth in parts of the Riviera Maya, local communities opted for sustainable and small-scale, nature-based tourism (e.g. scuba diving) alongside the traditional fishery rather than the Fordist tourism development model employed further north. In the mid-1990s, community decision makers in Xcalak opposed governmental plans for the construction of up to 30,000 hotel rooms along the coast, and, with the support of NGOs and several research institutions, an alternative development plan was presented that included the establishment of a marine national park around the Xcalak reefs and zoning measures for sustainable resource use (Chung, 1999: 3).

Ultimately as an outcome of the local population's resistance to the initial projects, a new management plan was approved by the state government, which included the establishment of the Xcalak Reefs National Park, and low-density zoning guidelines, but also the extension of paved roads and electricity supply in the regions. Another element of the project was Puerto Costa Maya, a FONATUR-planned cruise ship terminal, which began operating in 2001 close to the village of Mahahual. Initially, two cruise ships per week arrived at Mahahual but this number increased considerably to up to 12, before Hurricane Dean destroyed two-thirds of the pier in August 2007 (Meyer-Arendt, 2009: 4). Because of necessary reconstruction works in the months after the hurricane, the affluence of cruise passengers dropped temporarily to zero and, until now, has not yet recovered completely, partly because of other negative influences like the economic downturn in 2008 and the H1N1 pandemic in 2009. However, news sources reported that recovery seemed under way in 2010 (Capistran, 2010).

Hence, through the Costa Maya Cruise port, Quintana Roo's southern coast is as well influenced by package tourism (cruises represent one of the most typical examples of Fordist, standardized tourism products for mass consumption), albeit to a much lesser extent than Cancún or the Riviera Maya. Each day when one or several cruise ships arrive, thousands of disembarking passengers are offered a wide range of options for spending the day. Some tour operators have contracts with the cruise lines; others (e.g. taxi drivers) work independently. Most of these day trips are standardized tours (Sosa Ferreira, 2011: 65). Options include, for instance, excursions to "pristine" beaches, scuba diving, visits to some of the regional archeological sites (which are smaller and lesser known than the famous Mayan sites of the northern Yucatán peninsula) or trips to the Spanish fortress at Bacalar and the Mayan Museum at Chetumal. As an incarnation of "packaged alternative tourism," cruisers can

18 In 2005, INEGI (2006b) listed 282 and 252 inhabitants respectively for Mahahual and Xcalak—it has to be noted, however, that these data might underestimate the real numbers, e.g. due to a considerable share of informal population.

even opt for a "beach cleaning volunteering tour" during which a small stretch of beach is cleaned under the instructions of a guide (Costa Maya, 2010).

Most passengers, however, opt to stay close to the village of Mahahual, which, as Meyer-Arendt (2009: 6) puts it, "transformed itself into a microcosmos of Mexico" with restaurants, shops, street vendors or musicians catering to the arriving cruise tourists. As visiting time for passengers is limited, the level of business activity is very high as long as a cruise ship is anchoring, and drops sharply as soon as the cruise tourists leave in the late afternoon. Mahahual's small tourist bubble hence accounts for spatial as well as temporal characteristics: price levels at many souvenir shops are considerably higher as long as a cruise ship is docking, as several Quintana Roo residents explained in personal communication.

The small tourist bubble that developed in Mahahual also accounts for a large share of the Costa Maya's hotel capacity, which is, however, tiny as compared to the Tourist Zone, with only 343 hotel rooms in 2012 (SEDETUR, 2013). Besides some larger hotels around Mahahual, tourism infrastructure in the Costa Maya is dominated by small hotels, cabañas and dive centers under private ownership, often by American or European expatriates (Meyer-Arendt, 2009: 7). The average hotel in the region accounts for only nine rooms (SEDETUR, 2013)

Plans existed for a 2,660 hectares (6,570 acres) resort to be developed by FONATUR close to Mahahual, occupying three kilometers of shoreline and including a large hotel complex and a golf course. The USD 32 million project was suspended in 2008 because of building restrictions required by federal law to protect areas with mangroves (Noticaribe, 2008). But mass tourism development is not written off for the Southern Zone. Recently, FONATUR envisaged developing a project entitled "Costa Chetumal" between Mahahual and Xcalak, accessible from the state capital through a new bridge to be built across the Bay of Chetumal (Noticaribe, 2009; 2010). Similar plans exist for extending the Mahahual-Xcalak highway further south to Ambergris Caye in Belize, with the booming tourist town of San Pedro (Meyer-Arendt, 2009: 10). While the Chetumal Bay bridge is now included in state and federal development plans, other tourism-related projects are still at an early stage of development and officials admit that their implementation cannot be expected in the short run (Noticaribe, 2009; Palma, 2013). In 2013, the state government of Quintana Roo suggested constructing a new SPTD in the Costa Maya, but a realization is questionable, since the federal government announced that its stategy will focus on the consolidation of existing SPTDs, not on the creation of new ones (Varillas, 2013).

Some developers hope that the Costa Maya will eventually follow a development path similar to those of resort towns in the northern part of Quintana Roo, and ease population pressure in and around Cancún (Smith, 2009: 9). While it is more than questionable whether such options are compatible with the principles of sustainable regional development, it is clear that for now the Costa Maya is definitely to be situated at an earlier stage in the destination life cycle than Cancún and the Riviera Maya resorts. The region is still characterized by small-scale tourism structures, private ownership, and most overnight visitors travel independently. The Costa Maya is also an important destination for local visitors, especially on weekends, when day-trippers from Chetumal flock to the beaches. Interestingly, however, many of

the region's small-scale tourism businesses generate a substantial part of their income by also catering to cruise passengers, who represent one of the most typical examples of standardized Fordist mass tourism (Meyer-Arendt, 2009: 10).

The case of the Costa Maya shows that linear models, e.g. Butler's TALC, sometimes prove to be overly simplistic to describe patterns of tourism development, as different "stages" of tourism development may exist simultaneously. While maintaining a small-scale, pre-Fordist tourism structure, the Costa Maya is visited by thousands of cruise passengers every week, making it, as the newspaper *USA Today* (Clarc, 2009) notes, "one of the most visited, albeit least known, tourist regions" in Mexico. The case also exemplifies the power of the state, as the quantity and type of future tourism development is highly dependent on political decisions, or legislative restrictions, as in the case of the FONATUR project which was stopped by environmental law.

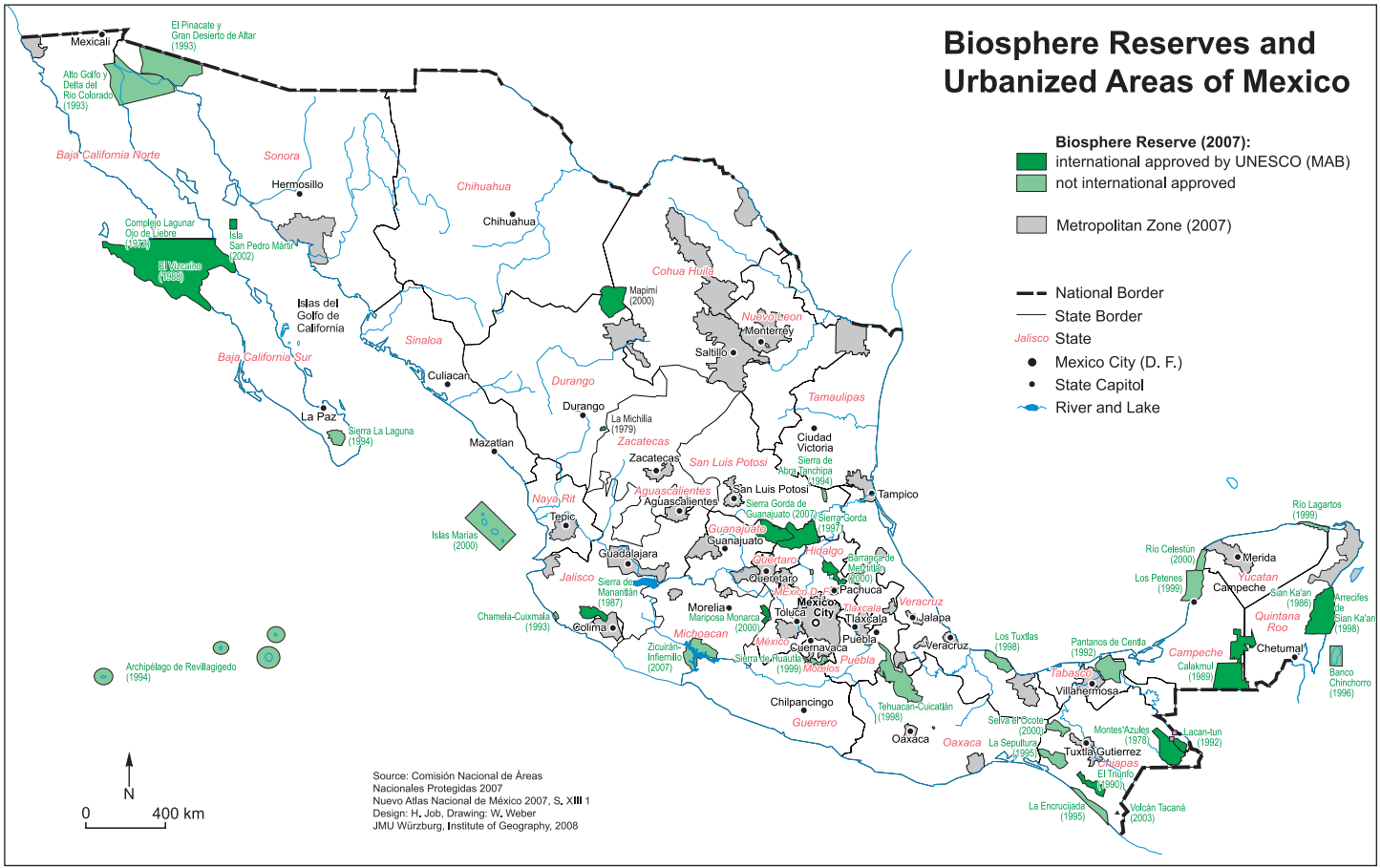
The models presented in Chapter 2.2 provide conceptual frameworks for the examination of the historical development of tourism in Quintana Roo. While the TALC originally was intended for single resort towns, it seems as if patterns of diffusion of tourism development, at least along the northern coastal corridor of Quintana Roo, resemble the spatiotemporal schemes described by Oppermann (1993) and Vorlaufer (1996). The prognostic function of the TALC allows conclusions to be drawn for resort towns at earlier stages, such as Tulúm, where growth will probably not halt in the near future—whatever positive or negative consequences this might imply, notably for the adjacent SKBR. A similar development path, at least in the long run, is imaginable for the Costa Maya south of Sian Ka'an.

4.2.4 Biosphere Reserves and other protected areas in Mexico

Mexico is a so-called megadiverse country. On its territory, 10.4% of the world's known plants, 9.1% of reptile species, 10.2% of the mammals, and 11.5% of bird species are found, which situates Mexico among the five most important countries in terms of biodiversity, together with Brazil, China, Colombia and Indonesia. Mexico's rate of endemic species is also among the highest in the world: 393 of its 707 reptile species (56%), 176 of its 282 amphibians (62%), and 139 of the 439 mammals found in Mexico (33%) are endemic (Mittermeier and Goettsch de Mittermeier, 1992). For the protection of this extraordinary biodiversity, numerous protected areas of different categories exist, some of which are integrated within the Mesoamerican Biological Corridor (MBC) (Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, 2011).

The first protected area in Mexico, the Sierra de los Leones National Park, dates back to 1917 (Brenner et al., 2008: 49). During the following decades, other national parks and forest reserves were created, notably during the mandate of President Lazaro Cárdenas (1934-1940). Today, however, biosphere reserves are Mexico's most important category of protected areas in terms of surface area and ecosystems. Biosphere reserves were established in the last four decades as a consequence of the initiation of the MAB in 1970 (Castañeda Rincón, 2006).

Map 4-2: Biosphere reserves and urbanized areas in Mexico



As of 2011, Mexico accounts for 174 federal protected areas under the responsibility of the National Commission for Protected Areas (CONANP[19]). Among them are 41 biosphere reserves covering a total area of 12,652,787 hectares (cf. Map 4-2), i.e. 6.4% of the national territory and just under 50% of all protected area categories combined (CONANP, 2011). 40 Mexican biosphere reserves are incorporated within the UNESCO-MAB Biosphere Reserves World Network, placing Mexico in third place among all countries behind the USA (47 reserves) and Russia (41) (UNESCO - MAB, 2010). Four natural sites in Mexico are declared World Heritage, one of which is the SKBR (UNESCO, 2013).

Only three Mexican biosphere reserves were established before 1986, and 29 of them since 2001 (UNESCO - MAB, 2010). As a consequence of this late emphasis on area protection, many natural landscapes, protected areas included, are under threat from environmental degradation and contamination. Given that all of the vast biosphere reserves are populated (albeit generally sparsely), and that the younger protected areas also include a considerable share of community-owned (*ejido*[20]) lands, considerable pressure is placed on natural resources (Castañeda Rincón, 2006).

Legislation dealing with protected areas has made significant progresses in recent years. However, the legislative framework remains fragmented and "in some instances outright conflicting" (Bezaury-Creel, 2005: 1028). In total, five different laws deal with issues related to conservation and the use of biodiversity. The most significant piece of legislation for Mexican protected areas is the *General Law for Ecological Equilibrium and Environmental Protection*, or *Ecology Law* (LGEEPA[21]). Adopted in 1988, it was modified several times since then, most recently in 2008. The changes made to the Ecology Law granted the Mexican federal states more extensive jurisdiction and autonomy (Bezaury-Creel, 2005: 1029). Furthermore, they set the stage for an integration of regional development and participation, together with conservation goals, all of which should be addressed during the process of establishing new protected areas as well as in the management of existing ones (Hüttl, 2006: 33).

Local participation should be ensured by the establishment of "Technical Assessor Boards" (*CTA*[22]) consisting of representatives of different groups of stakeholders, e.g. governmental and non-governmental organizations, universities, and important social groups from the local level. More often than not, however, participation for local actors is de facto restricted to the articulation of interests and opinions. As most local actors have limited access to technical and managerial knowledge, and limited financial resources, their interests are often dependent on the opinion of "experts," i.e. more powerful national or international institutions (Vargas-del-Río, 2010: 164). Other problems that many Mexican biosphere reserves and other protected areas are facing are related to a lack of financial and human resources for management bodies, inefficient management structures, high development pressure and resulting conflicts of interests over the use of natural resources, notably in protected areas close to expanding mass tourism resorts (Brenner, 2010: 299).

19 In Spanish: *Comisión de Áreas Naturales Protegidas*.
20 *Ejido* is a form of shared landownership in rural communities established in the Mexican constitution (Jones and Ward, 1998: 77).
21 In Spanish: *Ley General del Equilibrio Ecológico y la Protección al Ambiente.*
22 In Spanish: *Consejo Técnico Asesor.*

4.2.5 The Sian Ka'an Biosphere Reserve

4.2.5.1 Overview

The SKBR (cf. Map 4-3) was established in 1986 and declared a UNESCO World Heritage Site only one year later. Originally, the SKBR covered an area of 528,000 hectares. It was extended twice, incorporating the Uaymil Flora and Fauna Protection Area[23] in 1994 and the system of coral reefs off the reserve's coast (Reserva de la Biósfera Arecifes de Sian Ka'an) in 1998. Hence, the total area under protection now covers 652,193 hectares (274,704 in three separate core zones and 377,489 in the buffer zone), including 120,000 hectares of water areas. In 2003, the SKBR was designated a "wetland of international importance" under the Ramsar Convention (United Nations Environment Programme - World Conservation Monitoring Centre [UNEP-WCMC], 2008).

4.2.5.2 Physical geography of the Sian Ka'an Biosphere Reserve

The SKBR lies in an important transition zone between well-conserved terrestrial and maritime tropical ecosystems and contains an extraordinary range of biodiversity (Brenner et al., 2008: 56). It includes a 110-km-long portion of the world's second-longest barrier reef, coastal dunes, marshes and mangrove swamps, freshwater lagoons and tropical semi-deciduous and flood forests (Bezaury-Creel, 2003: 9; Tangley, 1988: 151). Sian Ka'an is the habitat of at least 800 plants and 2,100 species of fauna, among them 340 species of birds and ca. 100 species of mammals, e.g. jaguar (*Pantera once*), puma (*Felis concolor*), ocelot (*Leopardus pardalis*) and Baird's tapir (*Tapirus bairdii*) (UNEP-WCMC, 2008).

Tropical sub-humid climate predominates, with a mean annual temperature of 26°C and all monthly averages above 22°C. Total annual precipitation is 1,300 mm, of which around 75% falls between May and October. The mean relative humidity is around 80%. Cyclone season is between June and October and over the 20th century there has been an average of one hurricane every eight years, although the frequency seems to have increased slightly during the last decade. The strongest hurricanes that hit the site in the last decades were Dean (2007), Wilma (2005), Iris (2001), Roxanne (1995), and Gilbert (1988) (UNEP-WCMC, 2008).

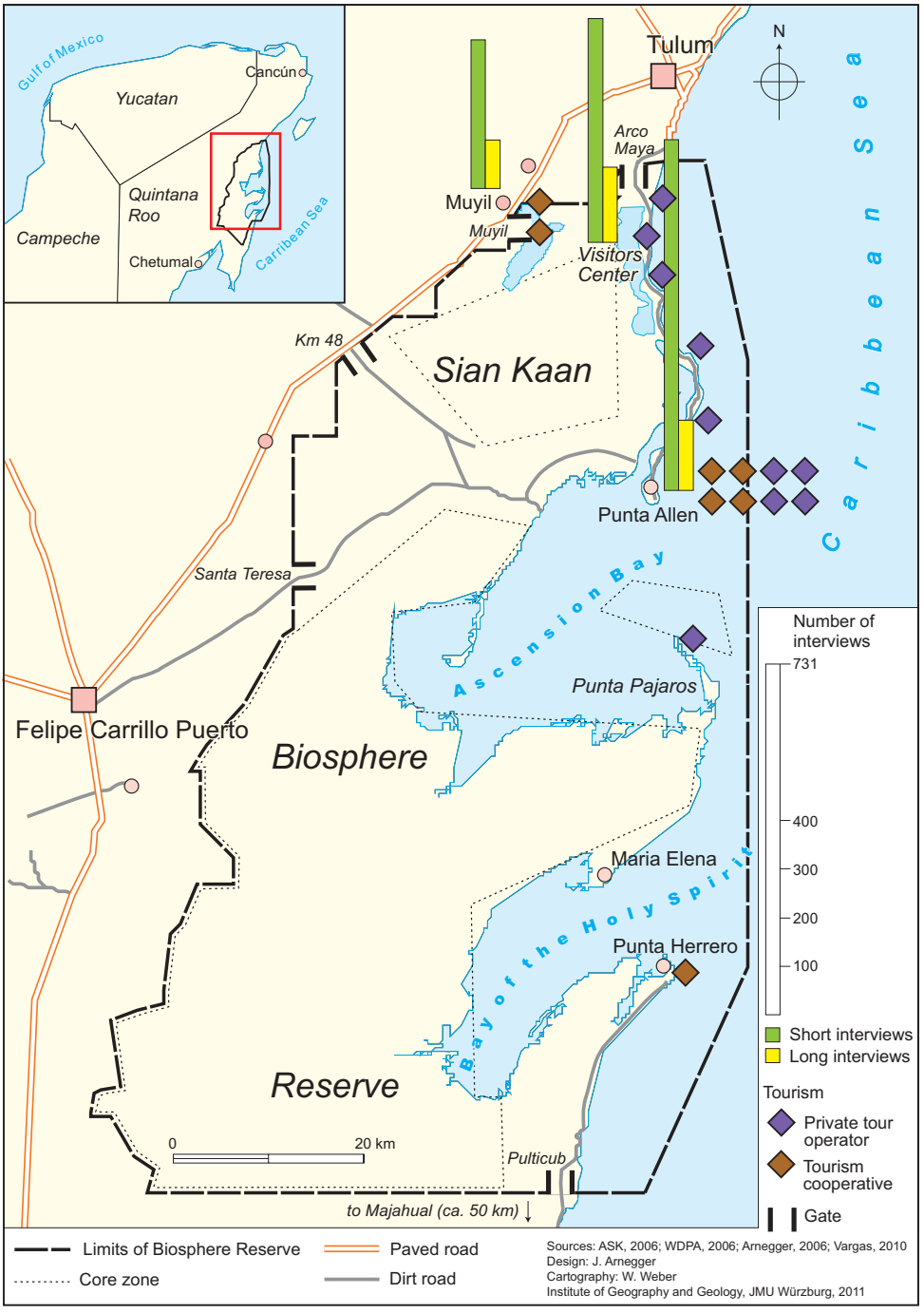
4.2.5.3 Human use, particularly tourism

About 22 archeological sites within the Reserve's boundaries bear witness to the presence of ancient Maya for more than 2,000 years. After the decline of the Mayan civilization, however, the area remained largely unsettled until the 1960s, basically because of its remoteness and natural conditions such as low-fertile soils and frequent flooding. These factors seriously restricted the exploitation of natural resources. No permanent settlements were established until 1970, and still today about 97% of the SKBR is federal property, and less than 3% belongs to local communities or private owners (Bezaury-Creel, 2003: 9; Brenner et al., 2008: 56).

Today, less than 1,000 people live within Sian Ka'an's boundaries. The largest

23 In Spanish: Área de Protección de Flora y Fauna Uaymil.

Map 4-3: Sian Ka'an Biosphere Reserve with depiction of tourism infrastructure and the number of interviews realized at census points during the case study



settlement is the fishermen community of Javier Rojo Gomez, which was established in 1968. The village, often referred to as Punta Allen, is situated at the tip of a narrow peninsula north of Bahía de la Ascensión (cf. Map 4-3) (Solares-Leal and Alvarez-Gil, 2003: 8). In 2006, Punta Allen accounted for ca. 600 inhabitants. Punta Herrero, south of Bahía del Espíritu Santo, has only a few dozen inhabitants, and María Elena, a fishermen camp north of Bahía del Espíritu Santo, is only temporarily inhabited during the spiny lobster fishing season from July to February (Brenner et al., 2008: 57). Besides these three settlements, there are some ranches, small hotels and vacation homes along the coastline of the Reserve, especially in the northern part between Punta Allen and Tulúm.

Until the late 1980s, spiny lobster (*Panulirus argue*) fishing in Bahía de Ascunción was, besides some subsistence fishing, the only significant economic activity[24]. After the destruction of lobster traps by Hurricane Gilbert in 1988 led to a temporary collapse of lobster production (accompanied by a general decline of lobster resources due to overexploitation of this natural resource in the 1980s), some families in Punta Allen turned to tourism as an economic alternative, taking advantage of possessing boats and snorkeling gear, i.e. their fishing equipment (Solares-Leal and Alvarez-Gil, 2003: 9). Today, there are six community-based tourism cooperatives in Sian Ka'an, four of them operating in Punta Allen and two in Muyil. Tourism infrastructure is very limited in the southern part of the reserve; however, the fishing cooperative in Punta Herrero also offers snorkeling or fly-fishing trips for tourists upon reservation.

The snorkeling tour business in Punta Allen is dominated by two of the four cooperatives—named *Vigía Grande* and *Punta Allen*—both of which have 24 boats (which are owned by the cooperative's members), each boat having a capacity to transport approximately 5-7 tourists in addition to the captain. The remaining two cooperatives are smaller and have 15 and three boats, respectively. A typical tourist boat trip in Punta Allen lasts around 1-2 hours and includes the observation of birds and, if possible, turtles and dolphins and swimming and snorkeling around the reef, as well as lunch in in one of Punta Allen's beachside restaurants. The two cooperatives operating in Muyil offer boat trips on the sweetwater lagoons of Chunyaxche and swimming in a channel used for trade by the ancient Mayas (cf. Figure 4-6). The cooperatives own six and seven boats, respectively (Horic, 2010: 52-53).

In addition to the tourism cooperatives, tourism infrastructure in the SKBR (notably the northern part) includes some small restaurants, hotels and ecolodges, as well as seven fly-fishing lodges. The latter operate in an exclusive niche market and cater mainly to North American, Scandinavian and British tourists. One-week packages cost around USD 3,000 and include daily fishing trips with trained guides and specially equipped boats, meals and accomodation. All fly-fishing lodges have their own specially equipped boats; however, they also rely on boats by the local cooperatives to increase their limited capacity, especially during the high season. Three

24 Before the 1960s, coconut plantations were the main economic activity in Quintana Roo. Afterwards, however, the harvest of coconut declined sharply because of the lethal yellowing phytoplasma disease, and was replaced by fishing as the region's main economic activity (Horic, 2010: 52-53)

Figure 4-6: Lagoon boat tour in Sian Ka'an

Photo: Arnegger (2006)

of the seven lodges are run by local entrepreneurs, while the majority is owned by people from other parts of Mexico or by foreigners. Fly-fishing season lasts from November to May and some lodges are closed during the off-season.

All of the accommodation facilities, including the fly-fishing lodges, are small-scale businesses, with capacities between two and 14 rooms or *cabañas*. Two hotels/lodges (as well as all of the fly-fishing lodges) have permits issued by the Reserve management to offer boat trips on their own, while the other ones organize boat trips for their clients in cooperation with the tourism cooperatives in Punta Allen and Muyil. One cooperative, *Las Boyas*, also rents four basic rooms to tourists (Horic, 2010: 48-49).

Private tour operators from outside the SKBR offer standardized day trips to tourists staying in resorts in the Riviera Maya and Cancún. A study in 2008 (Horic, 2010: 55) counted a total number of 12 private operators. However, estimating the exact number results is difficult, as some of the companies frequently change their names, mostly due to tax-related reasons. Most standardized tours to the SKBR include the pick-up at a Riviera Maya hotel, transport, either in vans or all-terrain vehicles driven by tourists themselves, lunch and a boat trip in Punta Allen or Muyil. The latter are organized by local cooperatives, as private tour operators from outside

the SKBR do not possess the necessary permits. Prices for the tours vary between ca. USD 80-140, and price differences can be mainly related to better services, e.g. group size or quality of insurance included, and distribution channels. "High-price" tours are offered via travel agents based directly in the large all-inclusive hotels, which requires commissions for third-party travel agents, while the cheaper operators rely on "freelance promoters" selling tours on the street in Playa del Carmen.

Finally, one community-based tour operator based in Tulúm also offers tours in the SKBR. *Community Tours Sian Ka'an* was initiated by one of the Muyil-based tourism cooperatives in 2003 with support from UNESCO, UNEP, United Nations Foundation (UNF) and RARE Conservation, an NGO.

4.2.5.4 Management body

The SKBR is managed by CONANP and the administration is represented by four officials in the main offices in Cancún, including the director and vice director. In addition, six staff members are based in an office in Felipe Carrillo Puerto and several rangers are stationed at the different access points to the Reserve (cf. Map 4-3).

CONANP is directly involved in tourism, as visitors are required to pay an entrance fee at the park ranger stations when entering the reserve. In addition, CONANP issues permits (e.g. for boats) and controls tourism businesses' compliance with the environmental regulations set by the SKBR management program. CONANP is described as holding a somewhat ambivalent position between conservation and local development through the use of natural resources (read: tourism).

4.3 Moroccan case study: regional context

4.3.1 Tourism development in Morocco: historical outline

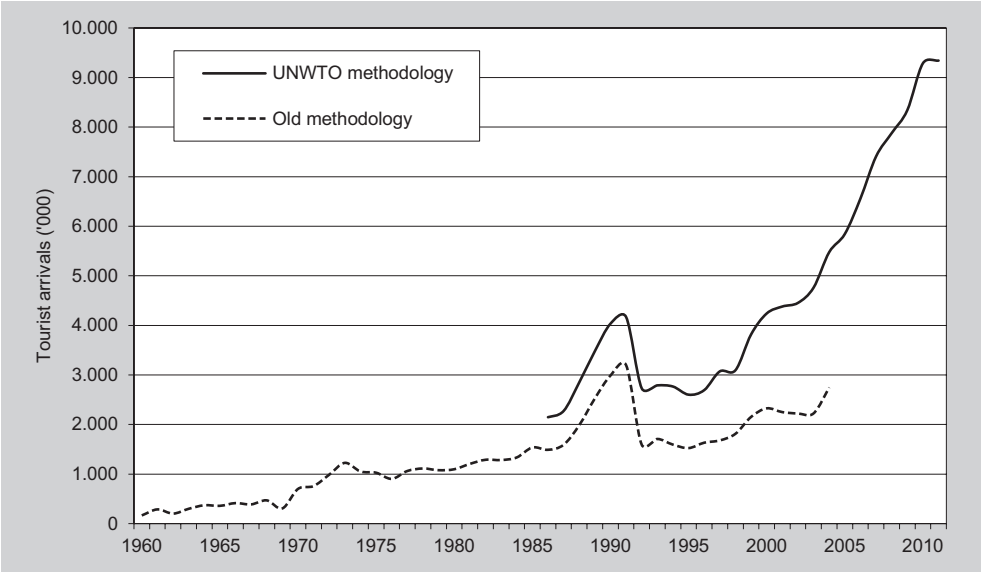
Morocco, a lower middle income country with a GNI per capita of 2,950 USD in 2012 (The World Bank, 2013) is the major tourism power in Africa, at least according to the regional definition of the UNWTO (which does not include Egypt)[25]. The kingdom registered 8.3 million international tourist arrivals in 2009, accounting for 18.3% of all international tourist arrivals on the African continent (World Tourism Organization, 2010: 9). The figure almost doubled since 2001, when 4.4 million international arrivals were registered, resulting in an impressive compound annual growth rate of 8.4% between 2001 and 2009 (Ministère du Tourisme et de l'Artisanat [MTA], 2013). Figure 4-7 shows the development of international tourist arrivals to Morocco between 1960 and 2009. Note that, as in the case of Mexico, a revised methodology in accordance with UNWTO criteria has been applied in recent years, which

25 It is interesting for the context of the present study that, despite its quantitative importance, tourism development in Morocco has received far less (international) academic attention than in Mexico. A comparative Google Scholar search for the term "tourism development," combined with the search criterion "Morocco," leads to 20,700 results, while an analogous search with the term "Mexico" produces 90,600 hits (http://scholar.google.com, accessed 21.02.2011).

now includes Moroccan migrants living abroad. This is a justifiable approach in economic terms, as national tourists residing abroad also generate inflows of foreign exchange. However, one welcoming side effect of this change in statistical methods is more impressive data, i.e. higher absolute numbers, especially as the arrivals of Moroccans living abroad increased disproportionally during the past ten years[26].

However, tourism development in Morocco has also seen phases of stagnation since the country gained its independence in 1956. Comparable to Mexico, the sector is highly dependent on political decisions and different extents of public investment at different phases since the 1960s had significant influences on its performance.

Figure 4-7: International tourist arrivals in Morocco, 1960-2009



Sources: Drissi-Habti (1997: 102); Hillali (2007: 124); Forum Marocain du Tourisme [FMDT] (2011) ; MTA (2013).

The foundation was laid before independence during the times of the French Protectorate, when tourism was essentially a phenomenon of the upper class and the colonial tourism policy was mainly directed at providing recreation spots for French officials and other wealthy visitors, e.g. through the creation of luxury hotels. While the total number of tourists was limited during the colonial era, the investment in infrastructure at that time was crucial for its development in the following decades (Bélanger and Sarrasin, 1996: 33-34).

In the first development plans after independence, relatively little attention was paid to tourism as compared to other goals, namely the stimulation of agricultur-

26 Discussing in details the reasons for this increase is beyond the scope of this dissertation, but factors such as diminishing transport costs and modern means of communication contribute to persistant transnational links between migrants and stay-behinds, and thus to a rise of visitor numbers of migrants notably during European summer vacations (de Haas, 2005: 28).

al and industrial production as well as capacity development of the public administration and workforce. Tourism was seen mainly as an affair for private sector investments. The five-year-plan of 1960-1964, for instance, prescribed only 1.4% of all public investments to the tourism sector, while 92% of the total investment in tourism should be made by the private sectors, encouraged by the introduction of more liberal investment laws and credit regulations (Bélanger and Sarrasin, 1996: 37). However, private investments, including foreign ones, were significantly sparser than expected, which caused the government to rethink the official tourism strategy and led to much more direct engagement of public funds in the subsequent plans (Hillali, 2007: 116).

In 1964, Morocco's economy was confronted with the first financial crisis after independence. A group of World Bank experts invited by the Moroccan government gave several recommendations regarding the economic policy—thus, as in the Mexican case, the advent of mass tourism in Morocco was initiated by the vision and imagination of bankers (cf. Chapter 4.2.1). As a result, tourism was given a priority role in the subsequent government's development plans, the creation of the Ministry of Tourism in 1965 marking the starting point for this new strategy (Bélanger and Sarrasin, 1996: 38, 43). The following years were marked by a strong direct influence of the state, notably in the construction of high-standard hotels, many of which were situated in designated "tourism development priority zones" on the Moroccan Mediterranean coast, the "Route of the Kasbahs" in the southern inland and the Bay of Agadir. From 1968, the government strove for a diversification, attaching more importance to increasing the capacity of mid-range accommodations (Hillali, 2007: 124-126). Morocco's policy in the 1970s was inspired by the Spanish example of tourism development during the 1960s, relying on the Fordist model of standardized *3S* tourism marketed to a mass market (Bélanger and Sarrasin, 1996: 69; Verdeguer, 2005: 119).

During the 1970s, public engagement declined again, as the previous, capital-intensive investments did not prove as effective as planned and the country's foreign debts rose continuously (Hillali, 2007: 126). This phase marked a shift in the role of the state, which, in return, once more increased its efforts in promoting private investment through tax exemptions and low interest credit schemes (Kagermeier, 2004: 390). Between 1973 and 1977, for instance, only 200 hotel beds were created by public funds (out of 2,354 that were planned, resulting in a realization rate of just 8.5%), as compared to 13,376 which were created by private businesses (Bélanger and Sarrasin, 1996: 66).

From the mid-1980s, influenced by the World Bank and the IMF, the state further withdrew from interfering in tourism, turning away from centralized planning, and promoting liberalization and privatizations (Hillali, 2007: 116). New developments were fully entrusted to private investors, which in some cases included the entire infrastructure, such as roads and supply lines. Formerly state-owned hotels from the earlier phases were privatized (Kagermeier, 2004: 390). The 1990s, too, were mainly marked by an absence of the state in tourism planning; ongoing privatization processes were often described as intransparent and marked by nepotism (Hillali, 2007: 116).

In parallel, the development of tourist arrival numbers between 1965 and 2009 also followed variable patterns (cf. Figure 4-7). Between 1965 and 1970, during the initial phase of state-planned tourism development, international tourist arrivals increased by 14.3% annually. Growth slowed down during the following decade, especially in the late 1970s, influenced by external factors such as the two oil crises and the following general downturn of international leisure travel. This trend changed again during the 1980s, when tourist arrivals to Morocco experienced a robust compound annual growth rate of 10.5%. At the end of the decade, nearly 3 million international visitors were registered annually.

Tourism arrivals stagnated during the 1990s. The downturn at the beginning of the decade was partly related to the Gulf War in 1991, as well as the closure of border crossing points to neighboring Algeria. In view of the latter event, economic consequences for the Moroccan tourism industry were less severe than the numbers might suggest, as Algerian border crossers could rarely be classified as consumers of tourism services (Kagermeier, 2004: 392). But even as visitation from Europe remained relatively stable, the decade marks a general unfavorable phase for tourism development in Morocco as compared to the increasing number of internationally competing destinations. During the 1990s, the country's compound annual growth rate of tourist arrivals (0.5%) was clearly below the African (6.4%) as well as the global (4.6%) average (FMDT, 2011; UNWTO, 2006: A3).

After two decades of laissez-faire politics and privatization, the Moroccan government began again to play a more active role in tourism during the last ten years. The beginning of this new shift in tourism policy was marked by a speech from the throne by King Mohammed VI in 2001 (Kagermeier, 2004: 397).

The very ambitious main goals of the *Vision 2010* strategy included:

– the increase of tourist arrivals to 10 million by 2010 (as compared to 4.4 million in 2001)[27],
– the creation of 160,000 hotel beds (in addition to the existing 97,000 in 2001),
– realizing EUR 48 billion (ca. USD 64 billion) in tourism revenues, and
– the creation of 600,000 jobs (MTA, 2011).

A framework agreement between the government and the Confederation of Moroccan Enterprises signed in October 2001 marked the beginning of the new policy (Kagermeier, 2004: 397). The strategy's main focus was on the so-called *Plan Azur*, the creation of six "new generation" beach resorts: Ras el-Ma (Saïdia) on the Mediterranean and Lixus (near Larache), Mazagan (El Jadida), Mogador (Essaouira), Tagazhout (Agadir) and Plage Blanche (Guelmim) on the Atlantic coast, for which policymakers scheduled the lion's share of the Vision 2010's public investments of more than USD 10 billion (MTA, 2011; The Economist Intelligence Unit, 2008: 47). Before the implementation of the Plan Azur, the city of Agadir was the only major

27 This is arguably the most important and most often cited goal of the Vision 2010. It is, for instance, the only quantitative target mentioned explicitly in the preamble oft he framework agreement from 2001.

beach resort in Morocco, and only around 30% of the total hotel capacity was located on the coast. After the completion of the six new resorts, two thirds of all Moroccan hotel beds were planned to be in coastal resorts by 2010 (Kagermeier, 2004: 398). The Plan Azur developments were termed "new generation" or "intelligent resorts" as they were planned to be containing typical elements of the Moroccan culture, such as replications of old *medinas* or traditional *souks*. The resorts should thus explicitly be set apart in style from competing destinations such as Tunisia or Egypt (Thiam and Rboub, 2008).

Many of the formulated goals proved too ambitious to be realized within the scheduled time, and the global financial crisis at the end of the decade amplified these problems. Hotel capacity, for instance, was "only" 152,936 beds in 2008, while the original plan strived for 257,000 (MTA, 2013). As of summer 2010, only at two of the six planned new resorts, Saïdia and Mazagan, were the first construction phases completed and businesses operating. Almost all resorts faced delays, most notably Plage Blanche and Taghazout, the latter of which was originally planned to be the first Plan Azur resort to be completed. After the pullout of the original contractors, the completion of Taghazout was even postponed to a later date; however, construction works were resumed in 2011 after a new contractor was installed, and the first golf course and hotels are expected to be operational in 2014 (Alami, 2013; Le Soir Echos, 2010). In April 2009, Morocco's tourism minister announced to "readjust and redimension" the Plan Azur, reducing the new resorts' planned hotel capacity and deferring the completion of the plan to 2016 (L'Economiste, 2009). These delays and problems notwithstanding, the number of tourist arrivals showed a remarkable increase over the last ten years, even if the target of attracting 10 million tourists by 2010 was narrowly missed (cf. Figure 4-7).

However, a discussion about whether some or most of the aspired goals have been missed or achieved does not necessarily question the meaningfulness of these goals in the first place. Almost all of the formulated targets were quantitative in nature (the Ministry of Tourism explicitly highlights the "clear objectives based on figures"), while qualitative aspects, e.g. a diversification of the tourism offer, only played a marginal role (MTA, 2011). On the contrary, the strategy's main focus, as pointed out above, was on standardized *3S* tourism, albeit aiming at a well-funded clientele (Kagermeier, 2004: 398). Morocco's traditional tourism main pillar—cultural tourism in cities such as Marrakech, Fez, Meknes or Casablanca—however, received considerably less attention: only 15,000 additional hotel rooms were originally planned in "cultural destinations," compared to 80,000 in seaside resorts. The Vision 2010's intentions to diversify the existing touristic offer, as mentioned above, seem vague, compared to the clearly quantified and described goals and the allocation of financial resources set out for the development of *3S* tourism products. Far less emphasis, it seems, has been placed on the development of rural tourism, while nature tourism, tellingly enough, was only mentioned as a "tourist niche"—among such diverse areas as cruise or health tourism (MTA, 2011). Given Morocco's highly diverse landscapes, climate zones and ecosystems, this neglect is somewhat surprising, especially as the kingdom's nature tourism potential could be employed as a unique selling proposition in tourism marketing compared to competing destina-

tions lacking such a physical geographic diversity (Kagermeier, 2004: 299). According to a survey conducted by the United States Agency for International Development [USAID], two out of three visitors to Morocco would like to spend more time in rural areas (USAID, 2006: 2).

In this respect, the public debate in Morocco became increasingly critical of the Vision 2010 in recent years. These critics did refer to the investor-related problems and delays in most of the new Plan Azur resorts as well as to the general strategies of tourism policy. Investors complained, for instance, that the Plan Azur "new generation resorts," planned to be embedded in Moroccan culture, did not match their expectations and turned out to be simply, as one tour operator put it, "classic resorts like in Tunisia and in Egypt, with real estate, hotels and surrounded by a golf course, shops and a marina" (Thiam and Rboub, 2008). Other experts warned that the focus on undifferentiated *3S* tourism might put Morocco's image as a highly attractive cultural destination at risk (Thiam and Rboub, 2008).

On November 30, 2010, King Mohammed VI presented the *Vision 2020* as a policy guideline for the next decade. Comparably to its predecessor, it sets ambitious goals based on quantitative indicators, e.g. doubling the number of tourist arrivals so as to gain a position among the world's top 20 destinations, or increase hotel capacity by 200,000 beds. It is noteworthy, however, that this new strategy also highlights sustainable development, a more regionally balanced distribution of tourist revenues and the sustainable use of natural resources. According to the plans, Morocco's tourism sector should be recognized by 2020 for being "the Mediterrenean destination of authenticity"[28], and its "innovative approach of sustainability, based on new-generation products, a long-term management of natural resources, and the participation of the local population in the benefits of tourism" (my translations)[29] (MTA, 2010: 8). It remains to be seen whether these goals, which seem, again, ambitious, will be met within the next ten years.

4.3.2 Socioeconomic profile of the Souss-Massa region

A historical socioeconomic analysis of the survey area proofs more difficult than in the case of Quintana Roo described in Chapter 4.2.2, due to several reasons:

Morocco is divided into 16 administrative regions (*Régions*). Secondary subdivisions are prefectures (*Préfectures*) in urbanized areas and provinces (*Provinces*) in rural parts of the country. *Régions* as primary subdivisions, endowed with some political autonomy, were created as recently as in 1997 as a major outcome of a still ongoing decentralization process (Catusse et al., 2007: 1-2; Troin, 2002: 20-21).

Since independence, various changes of the spatial organization have taken place. In 1960, the country was subdivided into 15 provinces and two prefectures, which differed largely in size and population and clearly reflected the heritage of the co-

28 In French : *"la destination méditerranéenne de l'authenticité."*

29 In French : *"approche innovante de la durabilité, fondée sur des produits de nouvelle génération, une gestion pérenne des écosystèmes et la participation des populations au développement et aux bénéfices du tourisme."*

lonial administration. After several redefinings, including the major reform of 1997, the secondary subdivisions today embrace 45 provinces and 26 prefectures (Troin, 2002: 20). For instance, the prefectures of Agadir-Ida Ou Tanane and Inezgane-Aït Melloul as well as the provinces of Tiznit, Taroudant and Chtouka-Aït Baha were all separated from the former vast province of Agadir in several steps since 1978 (Law, 1999: 250). While these successive redefinements represent without a doubt honorable efforts of adapting administration and spatial planning to the regional realities of the country, they complicate historical regional analysis, as statistical data from different years correspond to very different spatial entities. While this situation is somewhat better on the level of the *Régions*, their comparatively young history implicates that historical data are also not available.

These reasons, in addition to a general lack of statistical data on the regional levels in Morocco (Ministère de l'Économie et des Finances, 2010: 7), may explain why the following analysis of the socioeconomic situation and history of the Souss-Massa-Drâa region, where the SMNP is situated, is less quantitative in nature than the analysis in Chapter 4.2.2.

The administrative region of Souss-Massa-Drâa is situated in the south of Morocco and stretches, in an east-west direction, from the Atlantic coast to the Algerian border (cf. Map 4-4). It covers 70,880 km², or 15.9% of the Moroccan national territory, not including the Western Sahara[30]. It borders the administrative regions of Marrakech Tansift El Haouz in the north, and Guelmim Smara in the south (Souss-Massa-Drâa, 2010: 5). The western part of Souss-Massa-Drâa, sometimes unofficially referred to as "Souss-Massa region" (e.g. Berriane, 2002), is of particular interest for this study. It comprises the fertile plains of the Souss and Massa rivers, flanked by the foothills of the High Atlas in the north, and the Anti Atlas in the east and south, and covers the territories of the provinces and prefectures of Agadir-Ida Ou Tanane, Inezgane-Aït Melloul, Chtouka-Aït Baha, and Tiznit, which were defined as the survey region[31]. In the following, I mainly refer to this Souss-Massa region in a strict sense, however, due to the availability of statistical data, at some points the administrative region of Souss-Massa-Drâa at large has to be considered.

Berriane (2002: 295) describes Souss-Massa as a "space in continuous transition" which has changed its role several times since Morocco gained independence in 1956. Before the annexation of the Saharan territories by Morocco in 1976/79, the Souss-Massa region was situated at the country's outer periphery. Traditional agriculture was the main economic activity in the area, but negatively affected by high aridity with just 200 mm of annual rainfall, combined with marked seasonal as well as interannual variations and strong evaporation caused by high temperatures. Traditional agriculture was adapted to the difficult climatic conditions by maximizing the use of the limited resources of ground and surface water, e.g. through irrigation

30 The Western Sahara is an internationally disputed territory of 266,000 km² that is occupied by Moroco since 1976 and mostly de facto under Moroccan administration (cf. areal in the southern part of Map 4-4).

31 Berriane (2002: 314), in his analysis of "the Souss-Massa region and its prolongations" also includes the province of Taroudant, which is not considered part of the present study area as it does not border the SMNP.

systems of small dams and channels in the more mountainous regions, or through draw wells and cisterns in the plain (Berriane, 2002: 298-299).

Due to the harsh climatic conditions, the rural areas of the Souss-Massa region have for a long time been known as an emigration zone. Firstly, destinations for migrants included Moroccan agglomerations north of the region, such as Marrakech or Casablanca. At a later stage, migration became increasingly oriented toward Europe, notably France, where at the end of the 1960s, *Soussi* represented more than half of all the Moroccan immigrants (Berriane, 2002: 299).

With the dynamic economic development of the city of Agadir, mainly based on international tourism and a modern fishing port, intraregional rural-urban migration also gained importance. In 1981, a severe drought in southern Morocco forced thousands of farmers to seek alternative livelihoods in tourism, fishing and industry in Agadir (Paradise, 2005: 169). The share of the region's[32] rural population reflects this development: In 1978, 79.7% of all inhabitants of the (former) provinces of Agadir and Tiznit, largely representing the survey region, were living in rural areas. This figure dropped to 59.2% in 2004, and to 50.6% in 2008, a 36.5% decrease (compared to a decrease of 27.4% in the national average share of rural population, from 59.4% to 43.1%[33]) (HCP, 2006: 8; Haut Commissariat au Plan [HCP], 2009a: 20; Sécretariat d'État au Plan et au Développement Régional, 1978: 15). It is noteworthy that the majority of migrants, including interregional and international ones, preserved relatively strong ties and return frequently to their region of origin (Berriane, 2002: 299).

Although today the urban population represents half of its inhabitants, the region—namely, the Souss-Massa plain area—is still the country's most important agricultural production space. Since independence, the primary sector has experienced a profound modernization process toward market-based and export-oriented cultivation. The dams Youssef Ibn Tachefine on the upper reaches of the Oued (river) Massa, Abdelmoumen on Oued Issen and Aouluz on Oued Souss, put into operation in 1972, 1981, and 1991 respectively and retaining reservoirs of 290,000 m^3, 280,000 m^3, and 300,000 m^3 (HCP, 2009a: 127), were crucial for the implementation of modern irrigated agriculture. Irrigated farmland today encompasses 190,000 hectares in the Souss-Massa-Drâa region, mainly concentrated in the Souss-Massa plains and the Drâa valley (HCP, 2009b: 53). The increase in greenhouse farming constitutes another element of the agricultureal modernization process. Today, greenhouses cover almost 5,900 hectares in the survey region, of which more than 5,000 hectares are situated in the Chtouka-Aït Baha province (HCP, 2006: 71). Souss-Massa-Drâa is Morocco's major producer of cash crops such as fruits and tomatoes. The region accounts for 47% of the country's production of citrus fruits and 50% of bananas (HCP, 2009b: 53). In terms of its economic importance, the primary sector is still distinctively more important than on the national average (cf. Table 4-6).

32 The data for 1978 is related to the former provinces of Agadir and Tiznit; to assure interannual comparability of data, the province of Taroudannt, which in 1978 formed part of the former province of Agadir, is also considered in the numbers for 2008, in addition to the actual survey area, i.e. the prefectures and provinces of Agadir-Ida Ou Tanane, Inezgane-Aït Melloul, Chtouka-Aït Baha, and Tiznit.

33 Including the Western Sahara.

Table 4-6: Share of economic sectors in the GDP of Souss-Masa-Drâa and Morocco

GDP: share of economic sectors, 2007 (%)		
	Souss-Massa-Drâa region	Morocco
Agriculture	16.4	11.2
Fishery	4.5	1.0
Extractive and transformative industries	9.5	15.6
Electricity and water	0.7	2.6
Construction and public works	5.6	6.0
Retail	10.7	10.6
Hotels and restaurants	8.8	2.6
Transport, mail and communications	4.1	7.0
Financial and insurance services	3.1	5.9
Real estate, renting, and enterprise services	11.7	12.5
Public administration and social security	6.2	8.4
Education, health, and welfare	9.7	8.8
Other non-financial services	1.2	1.4
Fictitious sector	-2.8	-5.0
Net taxes of subsidies on products	10.8	11.4

Source: HCP (2010: 28)

Table 4-6 shows that this also holds true for the tourism sector, with hotels and restaurants making up 8.8% of the regional GDP in Souss-Massa-Drâa, as compared to only 2.6% in Morocco. However, a closer examination reveals marked regional differences and concentrations reflected within the socioeconomic characteristics of the survey region, notably a north-south divide between the urbanized prefectures of Agadir-Ida Outanane and Inezgane-Aït Melloul, and the rural provinces of Chtouka-Aït Baha and Tiznit (cf. table Table 4-7).

The Greater Agadir agglomeration with close to one million inhabitants, including the city of Agadir as well as fast-growing urbanized outskirts such as Inezgane and Aït Melloul, is the undisputed regional growth pole. Its urban economy is mainly based on the tertiary sector, which employs more than 50% of the labor force. Tourism is by far the most emblematic economic activity of the city, and many non-tourism businesses in the primary, secondary, and tertiary sectors serve as its suppliers. In contrast, the southern provinces of Chtouka-Aït Baha and Tiznit, with a much lower population density and a higher importance of the agricultural sector, are of essentially rural character. The provincial capital city of Tiznit functions as a regional sub-center with 53,000 inhabitants in 2004[34], whereas Chtouka-Aït Baha's main town, Biougra (26,000 inhabitants), is considerably smaller (HCP, 2007a).

34 Population data is based on the 2004 demographic census. Newer data is not available is not available for all towns; the next census is planned for 2014.

Table 4-7: Socioeconomic indicators for the survey area provinces and prefectures, the Souss-Massa-Drâa administrative region, and Morocco at large

Socioeconomic indicators for the survey area provinces/prefectures (2004)						
	Agadir-Ida Outanane	Inezgane-Aït Melloul	Chtouka-Aït Baha	Tiznit	Souss-Massa-Drâa	Morocco
Population	487,954	419,614	297,245	344,831	3,113,653	29,680,069
% of administrative region's population	15.7	13.5	9.5	11.1	100	--
Population density (inhabitants/square kilometer)	212.4	1,432.1	84.4	42.0	42.9	42.1
Rural population (%)	21.1	8.1	86.6	76.0	59.2	44.9
Greenhouses (vegetable farming; hectares)	104	760	5,027	0	6,752	n/a
% of workforce employed in agriculture and fishing (of total workforce)	21.1	13.5	59.7	37.9	37.8	34.1
% of workforce employed in trade and services	50,2	56,3	24,5	40,1	36,5	39,3
% illiterate population (15 years or older)	35.5	36.7	52.5	51.5	46.9	43.0
% of population of 25 years or older with completed secondary school (*Collège*) education	10.2	9.7	4.7	4.6	6.3	8.7
% of population of 5 years or older living in another region 5 years ago	8.0	11.0	9.5	3.0	5.6	4.4
% of households below relative poverty line	8.9	9.6	17.1	20.1	18.9	14.2
% of households without connection to the public water supply	36.4	20.0	35.1	59.2	39.1	42.5

For comparability reasons, all data refer to the 2004 general census. Source: own compilation from official census data from HCP (2005: 13-14; 2006: 8, 71; 2007a).

The urban-rural divide is also visible on a social scale. The Greater Agadir area has lower poverty rates and higher average levels of education as the provinces in the south of the survey area, despite the strong influx of rural population into the agglomeration. Rural-to-urban migration may well further increase in the future, as regional agriculture is more and more confronted with consequences of the overexploitation of groundwater resources through increasing and unadapted irrigation. In the Souss-Massa plain, Morocco's agricultural heartland, the groundwater level

sank from 10 meters in 1969 to almost 40 meters in 2004. Future scenarios predict a loss of up to 21,300 hectares of arable land by 2020 (HCP, 2007b: 54).

Tourism might bear some potential to provide alternative livelihoods to the populations of Chtouka-Aït Baha and Tiznit. However, up to now, the sector is spatially concentrated within the tourist bubble of Agadir, and essentially reduced to just one product (*3S*). Existing attempts to foster rural tourism in the two southern provinces of the survey area have yielded only mixed results so far.

4.3.3 Spatiotemporal development of tourism in Agadir and its surroundings

4.3.3.1 Agadir

Today, Agadir is, after Marrakech, the second most important tourism destination in Morocco and the country's most important beach resort. On a regional level, it is the only significant tourism destination close to the SMNP.

On the night of February 29, 1960, two 5.7–5.9 earthquakes struck the city of Agadir, killing about 15,000 of its 33,000 inhabitants (Paradise, 2005: 168-169). Furthermore, several hundreds of tourists died in collapsing hotels and apartments and 12,000 people were injured. The earthquake left the city devastated—in some districts, almost 100% of the buildings were destroyed (Surma and Dominianni, 2009: 17). This date is and will be remembered as a sad and catastrophic event for Agadir and its people, and yet it also marks a crucial turning point for the development of

Figure 4-8: The Bay of Agadir in the 1950s

Source: Historic postcard, available from https://www.flickr.com/photos/54996985@N00/3207985251/sizes/o/in/photostream/ (access date: 23.04.2014).

the city, and, eventually, for tourism development in the region and in Morocco at large. The photograph depicted in Figure 4-8 was taken from the ruins of a 16th century fortress (*Kasbah)* overlooking the city. It shows Agadir in the 1950s; the buildings on the hill in the foreground belong to the neighborhood of *Old Taborjt,* which was completely destroyed in the earthquake. The southern part of the coastline is not yet built up.

After the earthquake, plans for reconstruction aimed at transforming Agadir into a modern coastal city with a tourism-based economy. Zoning measures included the separation of a tourist space—a hotel strip close the beach—from residential and industrial areas by green spaces, wide boulevards and commercial areas (Paradise, 2005: 169-170). Figure 4-9 shows this functional division, with the beach and the tourist bubble on the right side of this post earthquake picture (taken from an undated postcard, probably from the 1980s), surrounded by parks and separated from downtown by Boulevard Mohammed V. The former old center, Old Taborjt, lied on the hill that can be seen on the left side in the foreground of the picture. Buildings at the 500-year-old site were not reerected after the earthquake, but the site is often visited by the local population to commemorate victims of this tragic event. The current city's downtown lies further south, recognizable by typical 1960s building complexes and large squares in the upper left quadrant of Figure 4-9. Little of the original infrastructure remained and today, Agadir, with its modern buildings, wide boulevards and large hotels, looks rather untypical for a city in the Islamic world.

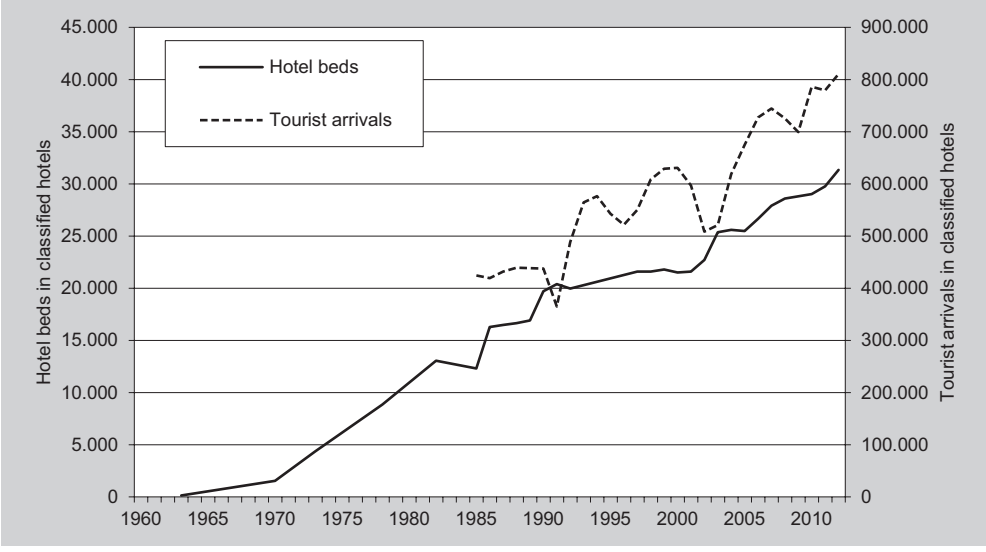
Figure 4-9: View of Agadir, ca. 1980s

Source: Postcard

The reconstruction plans were intended to accommodate only the original 33,000 people. However, the city experienced an unexpected and ongoing growth, largely based on the economic success of the tourism sector that promised livelihoods to the region's rural poor. By 1985, the population had grown to 150,000; in 2006, it had reached 372,000 inhabitants and recent projections suggest 464,927 inhabitants by 2014 (Commune Urbaine d'Agadir, 2009: 14; Paradise, 2005: 169; Préfecture d'Agadir Ida Outanane, 2007: 4).

This population growth can only be understood within the context of tourism development. After the earthquake, Agadir accounted for only 1% of Morocco's hotel capacity, which placed the city on the 26nd rank of tourism destinations in the country. The emphasis on the tourism sector in the city's reconstruction plans and the national development plans from 1965 (cf. Chapter 4.3.1) radically changed this position among the kingdom's tourism destinations. By 1971, Agadir had reached the second rank (after Tanger) in terms of tourist arrivals (9% of the country's total) and hotel beds (10%). By 1980, Agadir accounted for 20.7% of all hotel beds and 31% of all tourist overnight stays in Morocco (Berriane, 1983: 22). Both hotel capacity and tourist arrivals continued to grow (cf. Figure 4-10); While its relative importance decreased to 16.2% of all hotel beds in the country due to the opening of new resorts, Agadir is still the second most important destination in Morocco, albeit top-ranked Marrakech accounts for twice as many hotel beds in 2012 (MTA, 2013).

Figure 4-10: Tourist arrivals and hotel capacity in classified hotels in Agadir[35]



Sources: UN-HABITAT and UNDP (2004: 29) DRT Agadir (2008), HCP (various years) MDTA (2013)

35 Note that missing values are interpolated.

Comparably to Cancún, the modern resort-town of Agadir skipped the exploration and involvement stages of the TALC (Butler, 1980: 484). After three decades of development, the curve for hotel capacity in Figure 4-10 suggests that the destination entered a stage of stagnation in the 1990s, with a compound annual growth rate of just 0.9% between 1990 and 2000. Over the past decade, a new expansion period began, initiated by new tourism developments in the southern Bay of Agadir. This new tourist zone with upscale hotels and apartments is situated close to a new royal palace, the Oued Souss and the border of the SMNP. Recent large-scale development projects also include a marina with luxurious condominiums, shopping facilities and restaurants on the northern end of the Bay of Agadir, depicted in the lower right quadrant of Figure 4-11, as well as the new resort town Taghazout Bay some 20 kms north of Agadir (cf. Chapter 4.3.1).

Figure 4-11: View of Agadir in 2008

Photo: Arnegger (2008)

Visitor numbers also increased over the past decade, although they showed a relatively high sensitivity to external crises, notably the terrorist attacks in the United States on September 11, 2001 and the economic crises of 2008. However, as discussed in Chapter 2.2.1, other, more qualitative factors suggest that Agadir did not yet fully leave the stagnation stage behind. Overall, more than 70% of the hotel beds are over 35 years old and in need of renovation (Alami, 2011). As in Butler's (1980: 8) TALC model, the image of Agadir could be referred to as well-established, but not in vogue: most of the older hotels show clear signs of ageing and cater to price-conscious package tourists. Surplus bed capacity, another indicator for stagnation (Butler, 1980: 8), is apparent: notably older hotels in lower categories have very low occupancy rates, despite the wide availability of bargain packages (cf. Table 4-8).

Table 4-8: Hotel occupancy rates in Agadir (2011)

Occupancy rates in classified hotels (%)					
1-Star	2-Stars	3-Stars	4-Stars	5-Stars	Total
25	33	43	61	58	55

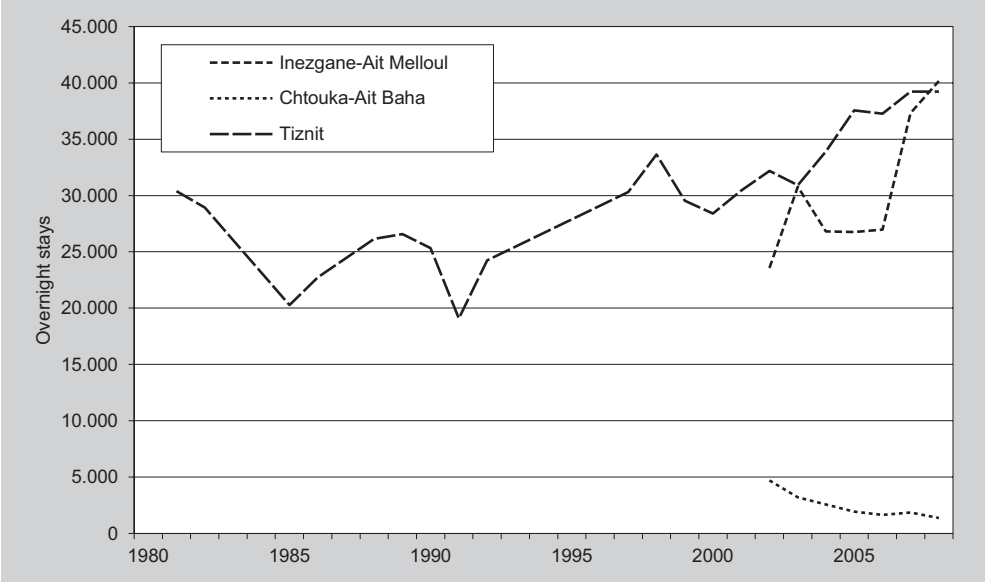
Source: Observatoire du Tourisme (2012: 39)

Regional tourism is highly concentrated. While Agadir accounts for 31,336 hotel beds, more than 800,000 tourist arrivals and ca. 4.5 million overnight stays annually, the other prefectures and provinces fall behind.

4.3.3.2 Other destinations in the study area

The following analysis of the tourism structures in the study *préfectures* and *provinces* south of Agadir is somewhat limited due to several reasons. First, tourism as an economic activity in the area is generally of a much lower significance than in the international resort town of Agadir. Second, because of the several administrative reforms, which involved splitting up old *provinces* and *préfectures* (cf. Chapter 4.3.2), statistical information for surrounding entities is sparse. However, available data on tourist overnight stays in classified hotels show notable intraregional differences (cf. Figure 4-12).

Figure 4-12: Overnight stays in classified hotels in Chtouka-Aït Baha, Inezgane- Aït Melloul and Tiznit[36]



Source: HCP (various years)

36 Note that missing values are interpolated.

The province of Tiznit and its capital, the only other city of considerable size in the survey area, registered just 39,000 overnight stays in its 460 hotel rooms in 2008, compared to over 4.5 million in Agadir. Inezgane, which is essentially a part of the Greater Agadir agglomeration and where, for instance, two golf courses with adjacent luxurious hotels are situated, also accounts for 40,000 overnight stays as well as the highest growth rates among the three prefectures/provinces, benefiting from rejuvenation projects in the southern part of the Agadir tourist zone (cf. Chapter 4.3.3.1). Figures for Chtouka-Aït Baha are fairly negligible (HCP, various years). Figure 4-12 implies that, besides Agadir, none of the survey area provinces or prefectures has passed through the development stage so far. In addition, tourism in Chtouka-Aït Baha and Inezgane- Aït Melloul is much less oriented toward an international clientele (cf. Table 4-9).

Table 4-9: Share of international and national visitors in classified hotels in the study area (2008)

	Share of national and international visitors (%)			
	Agadir Ida Outanane	Chtouka-Aït Baha	Inezgane- Aït Melloul	Tiznit
National visitors	20.0	62.7	77.2	29.4
International visitors	80.0	37.3	22.8	70.6

Source: Centre Régional d'Invesstissement Souss Massa Drâa (2008).

It has to be stated, however, that the official tourism statistics include only classified hotels and holiday villages and do not consider establishments like camp grounds or small-scale and privately owned accommodation facilities prevalent in many rural areas. Being an "unclassified" hotel does not necessarily imply low standard, as is the case with the popular Riads (traditional town houses, often luxuriously renovated, which now serve as upscale guest houses) in many Moroccan cities. Three hotels situated within the SMNP, two of which offer upscale accommodation in conventional hotel rooms as well as traditional Berber tents, also fall into this category (cf. Chapter 4.3.5.3).

In general, however, the southern prefectures and provinces of the study area are up to now relatively untouched by Fordist mass tourist developments. While Tiznit has an appropriate number of classified hotels for a provincial capital of its size, the coastal town of Aglou is characterized by a number of secondary homes.

4.3.4 National parks in Morocco

Morocco's high number of climate zones and habitats is influenced by its position between Europe, Africa, the Atlantic Ocean, and the Mediterranean. In total, 40 different land ecosystems can be identified (Nachid, 2005: 8). Morocco, especially the mountain ranges of Rif and High and Medium Atlas, are among the most spe-

cies-rich regions in the Mediterranean (Médail and Quezél, 1999: 1511). 24,000 animal species and 7,000 plants are found within the country's borders; the share of endemic species (11% of the fauna and more than 20% of the flora) is remarkable (Département de l'Environnement, 2009: 7).

However, this extraordinary biodiversity is threatened by population growth and urbanization, unsustainable patterns of tourist development, deforestation, and agricultural intensification (Franchimont and Saadaoui, 2001: 25-28). The establishment of protected areas, e.g. national parks, is considered an important measure to counter these negative developments.

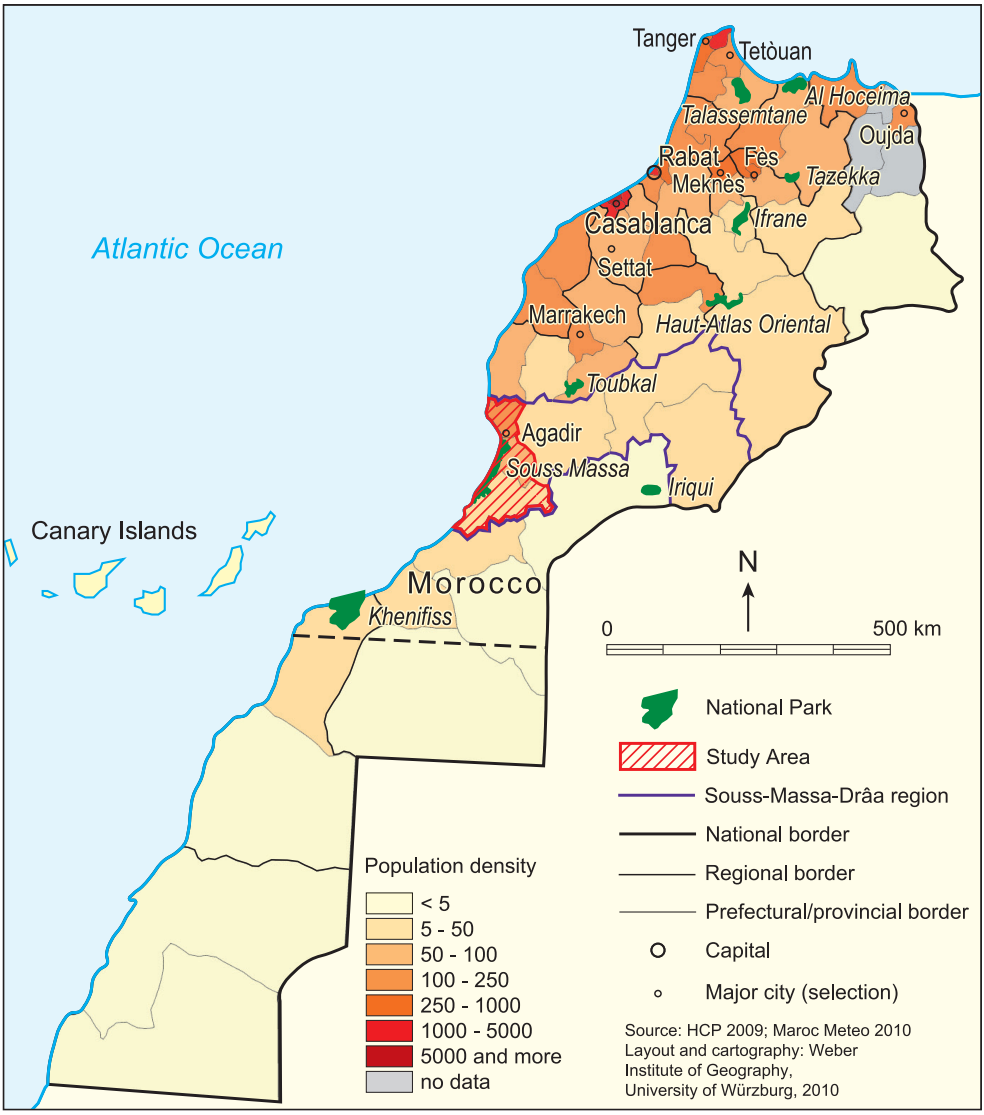
The *Dahir*[37] of September 11, 1934 provides the legislative basis for the creation of national parks. Thus, one can speak of a relatively long tradition of protected areas in Morocco. However, most Moroccan national parks are relatively young, the Toubkal National Park in the High Atlas, founded in 1942, and the Tazekka National Park in the Medium Atlas (1952) being notable exceptions. The third national park, Souss Massa on the Atlantic coast, was founded only in 1991, followed by Iriqi in the south of the country, close to the Algerian border, in 1994 (Clearing House Mechanism on Biodiversity of Morocco [CHMBM], 2010).

Through the creation of six new national parks since 2004, however, the number of parks has more than doubled in a relatively short period. The new parks include Al Hoceima on the Mediterranean coast, Talassemtane in the Western Rif Mountains, Ifrane in the Eastern Medium Atlas, and the Eastern High Atlas National Park (all established in 2004). Khenifiss in the Sahara and Khénifra in the Medium Atlas followed in 2006 and 2009 (CHMBM, 2009). Moroccan national parks represent a wide range of the country's different ecosystems and climate zones. Most are situated in the more peripheral, less densely populated parts of the country (cf. Map 4-4). The SMNP, situated only a few kilometers south of the agglomeration of Agadir, is thus rather an exemption than the rule. The total surface area of the Moroccan national parks is ca. 800,000 hectares, which represent, however, only 0.1% of the country's surface area, including the Western Sahara (CHMBM, 2009). The national forest administration, the High Commissioner for Water, Forests and Desertification Control (HCEFLD[38]), is the responsible political institution in charge of protected areas management.

A Protected Areas Master Plan (*Plan Directeur des Aires Protegées*) enacted in 1996, with the objectives of significantly expanding the number and total surface area of protected areas, as well as to clarify and modernize the respective legislation, marked the starting point for the large number of newly established national parks. In addition, existing parks, up to that time under central administration, were gradually granted more autonomy, and management plans for some of the parks were elaborated. The Souss Massa National Park was the first to be granted management autonomy in 1998. The management plan included zoning, i.e. the possibility to define core zones as well as areas where sustainable human activities are permitted (Abou el Abbes, 2005: 21-22). A law on protected areas is in force since 2010. It shall

37 A *Dahir* is a royal decree in the Moroccan legislation.
38 HCEFLCD (french): "Haut Commissariat aux Eaux et Forêts et à la Lutte contre la Désertification"

Map 4-4: National parks in Morocco



establish a formal legal foundation not only for national parks, but also for other categories of protected areas, i.e. nature parks, biosphere reserves, natural reserves and natural sites (CHMBM, 2008).

In summary, Moroccan national parks played only a minor role for politics until the 1980s, but fundamental changes occurred during the last three decades, in a

quantitative (number and surface area) as well as a qualitative (legislative conditions, modernizing of management concepts) way. In terms of qualitative aspects, political decision makers strive for an progress in accordance with the evolution of management concepts on the international level (cf. Figure 3-5): from static preservation, marked by top-down decision making, toward a "conservation" approach, i.e. integrated management in cooperation with the local population, whereby national parks are interpreted as opportunities for regional development (Job et al., 2003: 6). Within this context, the responsible Moroccan authorities strive for the development of nature tourism in all of the national parks, to generate income for local communities (Ribi, 2008: 13-14).

However, a certain gap between rhetoric and reality can be observed. Decision-making processes, for instance, still tend to be centrally structured and do not involve the directly affected population. On the other hand, local communities often show little initiative to take part in such decisions, certainly a legacy of state interventionism which dominated the protected areas policy throughout many decades (Harif et al., 2009: 7; Milian, 2007: 182). In addition, the state institutions in charge with protected areas management lack financial, technical and human resources, and are thus dependent on international governmental and non-governmental organizations (Le Matin, 2008).

4.3.5 The Souss Massa National Park

4.3.5.1 Overview

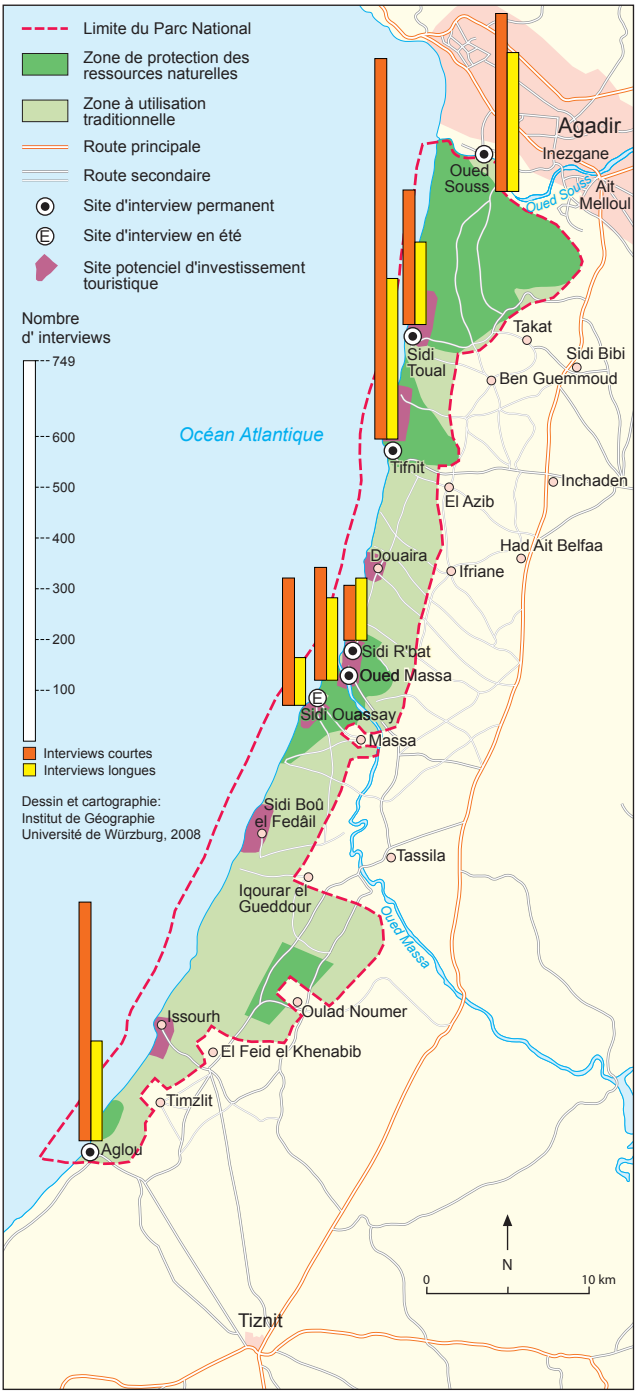
The Souss Massa National Park extends over an area of 33,800 hectares south of Agadir, along a 65-km long and five-to-ten-km wide stretch of the Moroccan Atlantic coast. Its territory lies within the Prefecture of d'Inezgane Aït Melloul, the Province of Chtouka Aït Baha and the Province of Tiznit. Its northern border is located only a few kilometers south of the city of Agadir (cf Map 4-5). It was established in 1991 and was the first of Morocco's younger national parks.

The estuaries of Oued Souss and Oued Massa (1,000 hectares) are designated wetlands of international importance under the *Ramsar Convention* (Wetlands International, 2011). The territory of the SMNP is also part of the vast Arganeraie Biosphere Reserve (2,560,000 hectares), which was established in 1998 (UNESCO - MAB, 2011b).

4.3.5.2 Physical-geographical aspects

The regional climate is semi-arid, with an annual rainfall of less than 200 mm; however, frequent coastal fog mitigates the effects of aridity on the vegetation (Bowden et al., 2003: 420). The mean annual temperature is 18.9 °C, and monthly mean temperatures vary between 14.5 °C in January and 23.0 °C in August (Harif et al., 2009: 2). Despite low rainfall, the region contains a major aquifer which is of high importance for the agglomeration of Agadir and the regional irrigated agriculture (Bouchaou et al., 2008: 268-269).

Map 4-5: SMNP with depiction of interviews realized at census points



The SMNP contains a variety of terrestrial as well as maritime habitats, including Argan tree (*Argania spinosa*)[39] woodland, *Euphorbia* steppes, dunes, cliffs, sandy beaches, and wetlands. The flora includes 300 species, 13 of which are endemic to southeast Morocco (CHMBM, 2011). The two estuaries of Oued Souss (on the northern border) and Oued Massa (located in the center of the park) are important sites for migrant birds, both as stopover points and wintering grounds (BirdLife International, 2011).

In total, more than 275 species of birds are registered in the SMNP (CHMBM, 2011). The Northern bald ibis (*Geronticus eremita*) is the emblematic species of Souss-Massa. Once widespread in southern Europe, the Alps, the Middle East and North Africa, today the only remaining stable breeding populations of this critically endangered bird are in the region of Agadir, most of them within the SMNP. Its presence was the main reason for creating the national park in 1991 (Bowden et al., 2003: 419-420).

The other fauna of Souss-Massa consists of 46 species of mammals, among them the jackal (*Canis aureus*), wild boar (*Sus scrofa*), red fox (*Vulpes vulpes*), brown hare (*Lepus capensis*), African wildcat (*Felis silvestris lybica*), common genet (*Genetta genetta*), and the crested porcupine (*Hystrix cristata*), 40 species of reptiles and amphibians, nine species of freshwater fish and numerous species of insects (CHMBM, 2011; Harif et al., 2009: 4). In the northern part of the SMNP, species of the Saharan fauna, gazelles (*Gazella dama mhor*, *Gazella darcas*), antelopes (*Addax nosomaculatus*, *Oryx damas*), and ostriches (*Struthio camelus camelas*), are being held in two enclosures with extensions of 1,200 and 2,000 hectares, for protection, reproduction, and future reintroduction in their natural habitats.

4.3.5.3 Human use, in particular tourism

The area was inhabited long before the creation of the SMNP, which is why seven villages (*douars*) with a total population of approximately 2,500 people are situated as enclaves within its borders (CHMBM, 2011). This situation, typical for Morocco and its comparatively young national parks, exacerbates the general problem of acceptance among local stakeholders which results from the use restrictions coming along with the creation of a national park (Goeury, 2007). The zoning of the SMNP takes this aspect into account by distinguishing "protection zones," "zones for the management of natural resources" and "zones of traditional utilization" (cf. Map 4-1). While in the protection zones all pasture farming and crop cultivation is strictly prohibited, the zones of traditional utilization, covering 55.6% of the park's surface area (18,800 hectares), allow fishing and traditional extensive agriculture. However, the majority of the local population holds an indifferent or negative attitude toward the SMNP, a phenomenon also observed in other Moroccan national parks (Milian, 2007: 182). In the case of Souss-Massa, major conflicts between the park management and the local communities include, among others:

39 Argan oil from the kernels of the tree is used for cosmetical purposes and as edible oil. Several women cooperatives were set up in Southwest Morocco with the support of national and international donors to generate local benefits from Argan oil production and commercialization (Lybbert et al., 2002).

– Illegal building on the coast, especially secondary or vacation homes;
– The ban on fishing (or rather its nonobservance) in the Oued Massa estuary;
– The prohibition of digging new wells to prevent salinization of the aquifer;
– Overgrazing, deforestation, and agricultural overexploitation, all of which increase soil erosion (Harif et al., 2009: 6).

This list of conflicts, by no means exhaustive, indicates a relatively low acceptance of the national park among the local population. To engender support for the SMNP through the generation of income for local communities, the park administration promotes the development of nature-based tourism, in cooperation and with the financial aid of international donors (El Bekkay, 2008: 15-16). For instance, SEO/BirdLife, an international NGO, provides funding for the training of local birdwatching guides and supports craft and fishing cooperatives. However, not all initiatives are successful. A building situated close to the Oued Massa estuary, constructed with the support of an international development cooperation agency and intended to house an *eco-museum*, was still disused more than ten years after its completion due to financing problems for equipment and long-term operation (Job et al., 2008). Another example is a tour to visit the species of the Saharan fauna in the two enclosures in the northern part of the SMNP. The national park administration initiated a call for tender, and exclusive rights to promote this USP of the national park were granted to a local tour operator in 2007. Tours were offered mainly to hotel guests in Agadir and represented an effort not only to increase tourist revenues, but also generate awareness for the SMNP and its ecosystem (cf. Figure 4-13). However, due to an insufficient number of customers, the project was halted after only 18 months.

There are a few privately owned accommodation facilities within the park: two "Kasbah-style" hotels at Sidi R'bat, and a Berber tent ecolodge at Douira. The two Sidi R'bat hotels feature a "traditionally-styled" Moroccan interior, but are situated within recently erected buildings (another example of staged authenticity so commonly found in tourism contexts), while the ecolodge at Douira claims to follow a stricter ecological approach, e.g. through energy self-sufficiency, organic food, and the use of natural building materials as well as techniques from the region (Djouad-Guiber, personal communication). Despite these differences, all three hotels cater mainly to higher-earning target groups, but nevertheless belong to the rather heterogeneous group of unclassified hotels not considered within the official Moroccan tourism statistics. This also holds true for the informal accommodation facilities found in the park (e.g. caves in the cliff line owned by local fishermen or privately rented rooms), whose exact number is difficult to estimate; these informal accommodations are almost exclusively used by local visitors.

Numerous private tour operators offer day trips to the SMNP. Most of the trips also include other regional attractions outside the park, such as visits to craft shops and lunch in a local restaurant, some of which exclusively cater to tourist groups and include shows featuring elements deemed typical of local Berber culture (e.g. the notorious belly dance, albeit not traditionally performed in the region). In terms of marketing, those operators do not explicitly highlight the SMNP and rather promote, somewhat indifferently, natural, cultural, and adventurous elements of the

tour. For instance, a poster outside a tour operator's office in Agadir reads (cf. Figure 4-14): "With a Landrover into a protected area—Sahara feeling!" (in German, aiming at the numerous German tourists in Agadir). It also shows pictures of "typical" landscapes as well as, misleadingly, gazelles and antelopes: because of the exclusive contract with a competing local tour operator mentioned above, the latter could, at that time, not be visited by participants of standardized daytrips such as the one advertised in the poster.

Existing tourism products thus cater mainly to package tourists in Agadir, a rather indifferent clientele (Arnegger and Aransay, 2011: 62). Existing strategies for tourism development may put further pressure on ecosystems: within the boundaries of the park, seven "tourism investment zones" with a total extension of 1,000 hectares are designated for the construction of hotels and vacation homes (cf. Map 4-5). The largest zone is located at the beach of the fishing village of Tifnit—in close distance to the main breeding area of the northern bald ibis.

4.3.5.4 Management body

The SMNP is managed by the regional branch of High Commissioner for Water, Forests, and Desertification Control. The SMNP's administration has an office in Inezgane, close to the Oued Souss estuary. Staff includes a director and four full-time employees, in addition to the park wardens in the field.

The HCEFLCD aims at promoting sustainable regional development through tourism in the SMNP. However, attempts so far, e.g. the planned eco-museum at Massa or the "Reserve tour" (cf. Chapter 4.3.5.3) had only limited success. Major limiting factors include the lack of financial resources, as well as widespread skepticism toward public authorities among the local population (Arnegger and Aransay, 2011: 61).

4.4 Interim summary

The rather extensive presentations of the two case study regions in this chapter were included for several reasons. First, given the pilot character of the two studies, analyses of the respective tourism policies, socioeconomic characteristics of the two regions, the regional tourism structures as well as introductory presentations of the protected areas were considered prerequisites both for planning the survey designs as well as for the interpretation of primary data. Second, existing research and literature in English on socioeconomic regional topics in general and protected areas in particular is limited in both regions, notably in Morocco. Therefore, this chapter should also help to bring both regions to the attention of a broader international audience. Third, the detailed presentations of the regional contexts should justify the selection of the case study regions, representing coastal protected areas in developing countries in spatial proximity and under influence of highly dynamic tourist spaces. While obvious differences exist between the SKBR and the SMNP,

Figure 4-13: Organized tour in the SMNP

A guide explains characteristics of the endemic Argan tree (*Argania spinosa*). Photo: Arnegger (2007)

Figure 4-14: "With the Landrover into a protected area – Sahara feeling!": Poster outside a tour operator office in Agadir

Photo: Arnegger (2007)

e.g. in terms of size of the area, designation, entry policy or the existence of community-based tourism initiatives, the two regions were selected on the basis of their structural similiarity: Cancún and Agadir, the two regional mass tourist bubbles, represent outcomes of Mexico's and Morocco's export-oriented tourism policies of the 1960s and 1970s. Despite the dynamic development of tourism infrastructure over the past decades, both regions are also marked by substantial intraregional disparities. While the two protected areas hold the potential to provide income to rural areas, they are facing pressure from tourism-related infrastructure development.

Status quo analyses of visitor structure and economic impacts are not available for either protected area. The main research questions of this dissertation thus relate to determining the size and structure of economic impacts of tourism in the SKBR and the SMNP, and to analyze the visitor structures with regard to expenditures, travel motivations and spatial behavior (cf. Chapter 1.2).

The next chapter describes the methodology applied in the two case studies. As pointed out before, the empirical approach follows a study design that was successfully applied in a number of extensive studies on protected areas in Germany (Job et al., 2003; Job et al., 2005a; Job et al., 2009). The present dissertation is the first attempt to apply this approach in other countries, for which the survey instruments were slightly modified. However, the method for calculating regional economic impacts from visitor spending used in this dissertation differs from the approach employed in the German case studies: whereas in Germany sectoral multipliers were available from a private consulting company, multipliers for the present study were calculated with the help of regionalized input-output tables. The conceptual background of multiplier analyses in general and input-output models in particular are described in the first part of the next chapter, followed by a presentation of the concrete demand-side study design in the SKBR and SMNP and relevant steps in data analysis.

5 Methodology

This chapter is divided into three parts. First, the concept of input-output analysis in the context of tourism impact studies is presented. As pointed out above, the input-output approach is an adaption with regard to the methodology applied in the case studies in German protected areas on which the empirical survey design is based. It was thus considered appropriate to begin Chapter 5 with a description of the conceptual background of input-output models, their application in economic impact studies and the approach employed here to derive regionalized multipliers from national input-output tables.

In the second part of the chapter, the study designs and methodology applied during the empirical fieldwork of the visitor survey are presented. Job et al. (2009: 62-69) describe this approach in more detail. However, due to territorial conditions, available secondary data and financial and human resources in the two case study areas, the methodology was slightly modified in both the SKBR and the SMNP.

The third part of the chapter illustrates the concrete steps in the data analyses and calculations.

5.1 Conceptual background: Estimating the regional economic impacts of tourism

5.1.1 Selected methods of economic impact analysis

Economic impacts of tourism can be determined at different geographical scales, with a focus on different central questions. For instance, on a national scale, the quantification of inflows of foreign exchange is a well-studied topic. On the other hand, in regional studies, the main focus of attention is often on income and employment effects (Job et al., 2005a: 27; Woltering, 2012: 117).

Fletcher (1989: 515-516) distinguishes four different approaches to measure regional economic impacts of tourism. The first one is simply described as presenting available secondary data, e.g. income and jobs in tourism businesses. Consequently, this approach tends to be imprecise, as data is often selected arbitrarily, which could eventually lead to misinterpretations. The second approach is the cost-benefit analysis. This instrument is based on much more structured procedures than the simple presentation of somewhat randomly selected data. However, cost-benefit analyses draw on a series of assumptions that in turn have significant influence on the results. In addition, cost-benefit analyses as a holistic approach may be too broad to analyze just one cost-benefit component such as tourism.

Furthermore, Fletcher describes multiplier models and the input-output analysis. Both approaches are based on a similar foundation, and are often employed

in comparable case studies. As both multiplier models and input-output analyses are relevant for the present study, the two approaches are briefly described in the following sections.

5.1.2 Multiplier models

Multipliers represent one of the oldest approaches for economic impact analysis. The concept is based on seminal works of Kahn (1931) and, most notably, Keynes (1933), which is why the approach is also often referred to as Keynesian multiplier (Archer, 1977: 3-5).

The multiplier approach is based on the common assumption of a circular flow economy, i.e. a regionally closed product circuit. Regional (tourist) expenditure then stimulates economic production. Hence, "a tourism multiplier is a measurement of the additional activity created by an additional unit of tourist expenditure or, in the case of a reduction in expenditure, the incremental fall in economic activity created by an incremental fall in tourist expenditure" (Archer and Fletcher, 1990: 1). A tourism multiplier includes three dimensions of regional economic impacts: direct, indirect and induced effects (Archer, 1977: 1-2; Armstrong and Taylor, 2000: 7-8). Tourism expenditure in a region generates *direct* revenue for businesses directly involved in tourism, e.g. restaurants, hotels, souvenir shops, gas stations, and so on. While some of the money earned through direct revenues leaks out of the region, a certain percentage remains in the area and is used to obtain stocks from suppliers, invest in infrastructure etc., generating *indirect* effects. Thirdly, a part of this indirect regional income (e.g. wages paid to local employees) again stimulates local consumption expenditure, through which additional turnovers, entailing so-called *induced* effects.

Subsequently, other rounds of impacts follow, as suppliers, households and the government uses parts of the earned money to purchase additional inputs (Goeldner and Ritchie, 2006: 387). However, the number of rounds of economic effects resulting from one given injection (i.e. tourist expenditure) into the regional economy is not indefinite, as in every round, parts of the obtained income is saved (*saving ratio*) or spend for imports from outside the region (*import quota*) (Armstrong and Taylor, 2000: 8). The size of the multiplier is mainly dependent on three factors (Archer and Fletcher, 1990: 29-33; Wall, 1997: 447): First, the size of the respective economy is important, as larger economies tend to be less dependent on imports than smaller ones. In the context of studies such as the present one, this aspect has to be considered when defining a case study area. Secondly, the degree of integration of a regional economy is important, as "the more that the inputs of enterprises can be acquired locally, the smaller will be the leakage and the larger will be the multiplier" (Wall, 1997: 447). Thirdly, the pattern of the initial tourist expenditure has a significant influence. For instance, overnight stays in luxury hotels belonging to transnational chains, which also rely heavily on imported goods, can be expected to imply smaller multipliers than privately owned hotels and restaurants that purchase mostly locally-produced goods and services.

Tourism multiplier models can be defined for a variety of spatial scales and regional contexts. Multipliers can be compared, e.g. to compare the economic importance of tourism in different regions. However, multipliers defined for one survey area are usually not transferable to other regions: "Tourism multipliers […] vary widely from area to area and perhaps the only satisfactory conclusion which can be reached about the size of multipliers is that it is dangerous to generalize" (Archer, 1977: 61). The widespread use of multipliers in economic impact analyses has also sometimes led to misleading results due to inaccurate applications by some researchers and consultants (Archer and Fletcher, 1990: 13-14). Nevertheless, multipliers can represent a meaningful and comprehensible concept to analyze the economic importance of tourism in a specific region.

5.1.3 Input-Output analysis

One of the major shortcomings of multiplier models is the often highly aggregated presentation of the respective economy. For example, an income multiplier generally indicates only the amount of additional regional income generated through economic processes, initiated by an external money injection. However, multipliers do not provide insights into economic impacts in specific sectors or subsectors of a regional economy. Input-Output models do not possess these shortcomings and they are still widely applied in economic impact analyses (Metzler, 2007: 37). The model is based on the simple but fundamental assumption that inputs are required for the production (i.e. output) of any goods or services. The original model was developed by Leontief (1936) to analyze linkages between producing and consuming sectors of an economy, and to predict how industries are affected by a change in final demand. In this sense, tourist expenditures' direct, indirect and induced economic impacts can be presented in a disaggregated way.

5.1.3.1 Input-output multipliers

An input-output table depicting flows of expenditure during a given time period (usually one year) between industries and final demand sectors in form of a matrix, the so-called transaction table (or transaction matrix), is the basic component of any input-output model (e.g. Armstrong and Taylor, 2000: 37). With the help of input-output tables, the flow of a monetary injection, e.g. additional tourist expenditure, can be traced through the economy; its impacts upon each sector and the amount of income, public sector revenue and imports it creates can be quantified for every round of transactions (Archer and Fletcher, 1990: 21). By definition, the total output of any industry equals its total input, which is why the most common table in such models is known as a *symmetrical input-output table* (SIOT). Archer (1977: 5-6) describes the basic pattern of a transaction table using a simple numerical example of a hypothetical three-sector economy (cf. Table 5-1).

Reading along the first row of Table 5-1, we can see that industry *X* produces a gross output of USD 1,000,000, of which goods worth USD 100,000 were sold to the same industry *X*, USD 320,000 to industry *Y* and USD 200,000 to local households as

Table 5-1: Regional expenditure flows

	Inputs (USD '000) purchased by				
Sales of (USD '000)	Industry *X*	Industry *Y*	Local household expenditure	Exports	Total output
Industry *X*	100	320	200	380	1,000
Industry *Y*	300	640	300	360	1,600
Local households	200	160	100	540	1,000
Regional imports	400	480	400	–	1,280
Total inputs	1,000	1,600	1,000	1,280	4,880

Source: Archer (1977: 6)

final consumers. In addition, goods worth USD 380,000 were exported. To produce this output, industry *X* requires inputs worth USD 100,000 from itself (industry *X*), USD 300,000 from industry *Y*, USD 200,000 from local households (i.e. payments for employees' and workers' salaries) and USD 400,000 for inputs from outside the region. Similarly, the other columns of Table 5-1 show expenditure flows of the other regional industry and final consumers, while rows show the patterns of sales of each sector across each of the other industries and final consumers (McCann, 2002: 158-159).

The upper left quadrant of the transaction table is called the processing sector, as it describes the flow of output from one sector to another. The lower left quadrant is the payments sector, showing necessary inputs in the production process of industries. The column entitled "final consumers" shows the final demand sector. Finally, the final row and the final column of the table show the total value of inputs and outputs of every sector (Miernyk, 1956).

Input-output tables are based on fixed-coefficient linear production functions introduced by Leontief; i.e. for each unit of output produced by a given industry, a fixed amount of input is required. Dividing the expenditure values in every cell of Table 5-1 by the respective total input of the respective industry, we obtain a matrix of regional expenditure coefficients (cf. Table 5-2). In Table 5-2 we can observe, for instance, that the regional expenditure coefficient of local industry *X*'s purchases of the output of industry *Y* is 0.3, or 30%.

Relying on these input-output coefficients, we can predict the effects of a given change in output demand. To provide a numerical example, one can consider a situation where the final demand for output of industry *X* increases by USD 100,000. Assuming that there are no constraints on production capacity, and that increase in labor income will not have any effect on households' spending behavior for goods produced within the region, i.e. households, here part of the category of regional factor inputs, are treated as "exogenous" (Armstrong and Taylor, 2000: 41). In the first round of expenditures, an increase in output of industry X of USD 100,000 would require:

Table 5-2: Regional expenditure coefficients

	Purchase coefficients of:			
	Industry *X*	Industry *Y*	Local household expenditure	Exports
Industry *X*	0.1	0.2	0.2	0.30
Industry *Y*	0.3	0.4	0.3	0.28
Local households	0.2	0.1	0.1	0.42
Regional imports	0.4	0.3	0.4	–
Total inputs	1.0	1.0	1.0	1.0

Source: Archer (1977: 6)

0.1 * $ 100,000 = $ 10,000 of additional output of industry *X*
0.3 * $ 100,000 = $ 30,000 of additional output of industry *Y*

and

0.2 * $ 100,000 = $ 20,000 of additional inputs from local households
0.4 * $ 100,000 = $ 40,000 of additional imports

These increases in output only refer to the first round of economic effects, as additional output produced by each industry is again transmitted to the supplying sectors through the successive rounds of expenditure. Effects for rounds two, three, and so on, could hence be calculated in a similar way. In doing so, we would notice that the net additions to output produced in each industry become smaller and smaller and eventually converge to zero (Armstrong and Taylor, 2000: 43; McCann, 2002: 160). In order to calculate the cumulative total additional output for each industry, it is suitable first to refer to a simplified transaction table in more general terms.

Hence, we could assume a region with industries 1 and 2 and a final demand sector. Industries all sell output to and buy inputs from one another, while the final demand sector does not provide inputs for regional production processes (McCann, 2002: 173-174). Thus, the input coefficients for industries 1, 2 can be arranged into a transaction matrix $A = [aij]$ as follows:

$$A = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} \quad (1)$$

Where coefficient a_{ij} represents the requirements of input i needed in the production of one unit of output j. Assuming that industry 1 produces outputs to satisfy the input requirements of each industry 1, 2 plus the demand of an external sector not providing inputs to the regional economy, the total output of industry 1, x_1, can be expressed by the equation:

$$x_1 = a_{11}x_1 + a_{12}x_2 + d_1. \quad (2)$$

Where $a_{ij}x_{ij}$ is the input demand for industry j and d_1 is the final demand by the external sector for output of sector *1*.

Equation (1) can be rearranged so as to get:

$$(1 - a_{11})x_1 - a_{12}x_2 = d_1. \quad (3)$$

Repeating this procedure for each of the sectors gives a matrix equation that can be written as:

$$\begin{bmatrix} (1 - a_{11}) & -a_{12} \\ -a_{21} & (1 - a_{22}) \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = \begin{bmatrix} d_1 \\ d_2 \end{bmatrix} \quad (4)$$

Where the matrix on the left represents the input coefficients, and the vectors on the left- and right-hand side of the equal sign contain the outputs of the respective sectors that are purchased as inputs by other industries and final external demand for each sector's output, respectively.

We see that the matrix on the left-hand side is the sum of the identity matrix *I*, and the matrix *–A*:

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} \quad (5)$$

Thus, we can write:

$$(I - A)\, x = d \quad (6)$$

Where x is the variable vector and d is the final demand vector.

The matrix $(I - A)$ is also called *technology matrix* and can be denoted as:

$$T = (I - A) \quad (7)$$

If we substitute through the equation above we get:

$$Tx = d \quad (8)$$

Calculating the inverse of T, denoted as T^{-1}, gives:

$$x = T^{-1}d \quad (9)$$

Thus, the input demand requirements through the different rounds of the input-output expenditure flows for the different economic sectors can be calculated for any given level of external output demand (McCann, 2002: 173-174). In the example (cf. Table 5-3), T^{-1} is:

Table 5-3: Inverse matrix and sectoral output multipliers

	Industry X	Industry Y
Industry X	1.25	0.42
Industry Y	0.62	1.87
Sectoral output multiplier	1.88	2.29

Source: Derived from Armstrong & Taylor (2000: 45) and Archer (1977: 6-7)

Relying on the equations above, one can also calculate the total regional multipliers impact of given changes in output demand. For instance, an additional demand by the export sector for USD 100,000 of output of industry *X* would, through the successive rounds of expenditures, eventually result in the regional output and expenditure flows shown in Table 5-4.

Table 5-4: Regional output and expenditure flows resulting from an increase in final consumer demand of USD 100,000 for output of industry *X*.

	Inputs (USD '000) purchased by				
Sales of (USD '000)	Industry *X*	Industry *Y*	Local household expenditure	Exports	Total output
Industry *X*	13	13	–	100	125
Industry *Y*	38	25	–	–	63
Local households	25	6	–	–	31
Regional imports	50	19	–	–	69
Total inputs	125	63	–	100	288

Source: Based on a numerical example by Archer (1977: 6-7)

The sums at the bottom of each column of Table 5-3 represent so-called *type I* output multipliers, as for each industry they relate a unit of tourist expenditure to the resultant increase in the regional economy's output level (Archer, 1977: 2; Armstrong and Taylor, 2000: 45).

Output multipliers are not the only multipliers that can be calculated from input-output tables. However, it is important to note that multiplier calculations and terms are sometimes used in an inconsistent and inappropriate manner, as Archer (1977: 12) has observed three decades ago. Output multipliers should hence not be confused with income or employment multipliers, which are calculated relying on different procedures. For the present study, income multipliers are of a particular interest. According to Archer (1984: 517), most economists define income multipliers derived from input-output models as "the amount of income generated in the economy concerned by an additional unit of tourist expenditure." In the example considered above, USD 100,000 extra import earnings in industry *X* would generate additional USD 31,000 of direct and indirect regional household income.

In the example considered above, local households were treated as exogenous, i.e. as part of the final demand sector. This can be considered a conservative approach, as it assumes that an increase in household income does not lead to an increase in household consumption, but goes exclusively into household savings. Multipliers based on this approach are also known as *type I multipliers*. Alternatively, households could be treated endogenously within the transaction matrix, i.e. as if they were a producing sector. In this case, it is assumed that any extra income received by households will be spent on goods and services. *Type II multipliers* consider these so-called induced effects (Armstrong and Taylor, 2000: 46-47). However, in this study, it was decided to rely on the first approach, in order to reduce the risk of overstating economic impacts and to make results more comparable to other studies in which induced effects were also not taken into consideration (Job et al., 2003; Job et al., 2005a; Job et al., 2009; Woltering, 2012).

In practice, two different forms or dimensions of input-output tables exist: product-by-product tables and industry-by-industry tables. In the former, a column in the processing sector represents a product technology (i.e. the inputs required to produce a given product), while a row indicates the distribution of a product to intermediate inputs and final demand. In industry-by-industry tables, on the other hand, a column contains all inputs required by a given industry, while a row shows the distribution of industry output to other industries and to final users. More generally, industry-by-industry tables assume that the input structure for a given industry is the same for both primary and secondary products. Product-to-product tables, on the other hand, assume similar input structures for the same products, no matter which industry produces them (UN, 1999: 86).

In the literature, it is disputed whether industry-by-industry or product-by-product tables are preferable. According to Almon (2000: 28) and other authors, industry-by-industry tables are economically less meaningful and can produce anomalous results. In terms of applicability, however, industry-by-industry tables possess considerable advantage over product-by-product tables, which is why other scholars argue in favor of this approach. Thage (2005: 2), for instance, describes industry-by-industry tables as "part of 'best practices' official statistics, fulfilling central quality criteria, including user needs." Eurostat, the European Union's statistics division, states in its *Manual of Supply, Use and Input-Output tables*: "While product-by-product input-output tables are believed to be more homogenous, industry-by-industry input-output tables are closer to statistical sources and actual observations," and considers them more suitable for the purpose of economic impact analyses (Eurostat, 2008: 301). In light of these arguments, industry-by-industry tables were employed in this study.

SIOTs are available for many countries, e.g. all member countries of the Organisation for Economic Co-operation and Development (OECD), which includes Mexico. For Morocco, however, only supply and use tables (SUTs) are published, from which SIOTs can be derived. Supply tables show the value of products produced in the country, distinguishing product categories and industries (Bleses, 2007: 89). For instance, in the hypothetical example in Table 5-5, we read in the first column that the agricultural sector produces 270 units of agricultural products, but also by-

products such as industrial products (10). In addition, it provides services (20). Reading along the first row, we see that agricultural products are also produced as by-products in the industrial sector (30) and the service sector (50). The imports vector shows the total imports of each product category to the country.

Table 5-5: Example of a supply table

Industries / Products	Agriculture	Industry	Service activities	Imports	Total
Agricultural products	270	30	50	20	370
Industrial products	10	430	100	50	590
Services	20	40	550	30	640
Total	300	500	700	100	1,600

Source: Eurostat (2008: 21)

Use tables show the use of products, distinguished by product category and economic sector as well as categories of final demand (Bleses, 2007). In the hypothetical example depicted in Table 5-6, the columns reflect the input structure of each specific industry. E.g., as can be seen in the first column, in order to produce a total value of 300 units, the agricultural sector requires agricultural products (34 units), industrial products (106) and services (70). The value added row is usually displayed in a disaggregated form and can include components such as the compensation of employees (COE), net taxes on production, consumption of fixed capital and net operating surplus (Eurostat, 2008: 20).

Table 5-6: Example of a use table

Industries / Products	Industries			Final uses			
	Agriculture	Industry	Service activities	Final consumption	Gross capital formation	Exports	Total
Agricultural products	34	59	143	81	21	32	370
Industrial products	106	119	77	123	103	62	590
Services	70	112	75	291	61	31	640
Value added	90	210	405				705
Total	300	500	700	495	185	125	

Source: Eurostat (2008: 21)

As stated above, updated SUTs but no SIOTs were available for Morocco. SIOTs had to be derived from the SUTs according to the transformation model with domestic output and imports (*Model D: Industry-by-industry input-output table based on fixed product sales structure assumption*) described in more detail by Eurostat (2008: 353-357). The basic mathematical procedure is illustrated in Appendix 5.

5.1.3.2 Regionalization of input-output tables

One of major obstacles to the application of input-output models in regional economic impact analyses is the non-availability of subnational input-output tables for a given survey region. It is possible to construct regional input-output tables based on extensive and representative surveys of regional industries. However, in the majority of cases, pure survey approaches are considered prohibitively costly, an argument that holds true for this study as well.

Thus, in many cases, preference is given to hybrid or "semi-survey" approaches, which are considered more cost-efficient than full-survey models, but at the same time more accurate than nonsurvey techniques, the third category, which is based on the regionalization of national input-output tables with the help of *location quotients* (LQs) (Lahr, 1993: 278). However, given timely and financial constraints in many research projects, the nonsurvey approach is still widely used, and "a nonsurvey table may still permit useful insights despite its imperfections" (Kronenberg, 2009: 41). In light of these argumetns, a nonsurvey approach was chosen to construct regional input-output tables and to calculate regional economic impacts of tourism in the two case study areas. Regional multipliers are cross-checked for plausibility with results from other case studies, notably in Germany, where reliable industry-specific multipliers were available from extensive business surveys (Mayer et al., 2010: 75). Nevertheless, being aware of the shortcomings of nonsurvey techniques, results should be interpreted with care.

As stated above, most nonsurvey approaches use LQs to adjust national input-output coefficients to produce a regional table. Thereby, the simplest type of a LQ is defined as the regional output or employment share of a given industry in a specific region relative to the national share of output or employment in this sector (Flegg et al., 1995: 549). Thus, a simple output-based regional LQ, or SLQ, can be written as:

$$SLQ_{ir} = \frac{\frac{O_{ir}}{O_r}}{\frac{O_{in}}{O_n}} \tag{10}$$

where SLQ_{ir} is the ratio of the regional proportion of output O in a given industry i in region r, relative to this industry's share in the national n output, O_{ir} is regional output in sector I, O_r is the total regional output, O_{in} is the national output in sector I, and O_n is the total national output (cf. McCann, 2002: 144). SLQs can be used in input-output analyses to adjust national coefficients in the following way: coefficients of sectors that are underrepresented in the survey area (i.e. with an $SLQ < 1$)

are reduced, while import coefficients are increased accordingly. Thus, it is assumed that underrepresented industries are not able to meet the whole of any increase in demand for its output, which means that they have to rely partly on imports from other regions (Flegg et al., 1995: 549). Sectors with $SLQ > 1$ are not adjusted (Tohmo, 2004: 44).

Regionalized SIOTs based on SLQs may produce misleading results, as they do not differentiate between different sectors to which a given industry is selling its output. In other words, all coefficients in a given row of an input-output table would be adjusted by the same value of SLQ, not taking into account the relative sizes of the respective selling and purchasing sectors (Flegg et al., 1995: 549). *Cross-industry location quotients* (CILQs) are often described as a means to overcome some of the SLQs' shortcomings. CILQs can be defined as the proportion of national output (or employment) of a regional selling industry i to that for buying industry j:

$$CILQ_{ij} = \frac{\frac{O_{ir}}{O_{in}}}{\frac{O_{jr}}{O_{jn}}} \tag{11}$$

where O_{ir}/O_{in} is regional/national output in the supplying industry i, and O_{jr}/O_{jn} is regional/national output in the purchasing sector j (cf. Flegg and Webber, 2000: 564; Schaffer and Chu, 1969: 87). As can be seen from the formula (13), $CILQ = 1$ when $i = j$. Thus, the use of the SLQ is preferable over the CILQ along the principal diagonal of the matrix, since the latter would not implicate any adjustment of coefficients (Flegg et al., 1995: 550). That is, national coefficients would be adjusted using the SLQs along the principal diagonal and CILQs elsewhere, for all cases where $SLQ, CILQ < 1$ (Tohmo, 2004: 44).

Both SLQs and CILQs can be used to estimate regional trading coefficients defined as the shares of any given commodity supplied from within the region. Round (1978: 181) argues that any trading coefficient is a function of three variables: the relative size of the supplying sector, the relative size of the purchasing sector and the relative size of the region. While the SLQ accounts for the first and the third variable, the CILQ incorporates the first and the second (Round, 1978: 181).

Flegg et al. (1995: 552) suggest an adjustment formula that aims at overcoming the shortcomings of both the SLQ and CILQ, while retaining their virtues:

$$FLQ_{ij} = CILQ_{ij} \times \lambda_r^{\beta} \tag{12}$$

where $\lambda_r = (O_r / O_n) / [\log_2 (1 + O_r/O_n)$. It is assumed that $\beta \geq 1$.

Empirical testing of the *FLQ* formula showed that it was able to deliver significantly more accurate results than the SLQ or CILQ (Tohmo, 2004), which is why it was decided to adopt it for the present study (for a detailed explanation of the methodology and a critical discussion of the FLQ formula cf. Flegg et al. (1995), Brand (1997), Flegg & Webber (1997)). The regionalized multiplier (inverse) matrices for both case studies are included in Appendix 2 and Appendix 4.

The actual study design, and the data analyses and calculations employed in the two case studies, are described in the following chapters.

5.2 Case study design: visitor surveys in the SKBR and the SMNP

On-site visitor surveys were conducted between 2006 and 2008. Visitor surveys consisted of three modules:

- visitor counts at selected census points, so as to determine the total number of visitors in the respective protected area,
- standardized short questionnaires to obtain the visitor structure according to selected criteria (e.g. day-trippers vs. tourists, segmentation according to accommodation category, package tourists vs. independent visitors, etc.), and
- standardized long questionnaires to obtain data on nature-based tourism products consumed by tourists, national park affinity, expenditures in different sectors of the economy, and other sociodemographic data.

The survey instruments were approved in several studies in Germany (e.g. Job et al., 2005a; Job et al., 2009). Additionally, separate pretests were conducted in both case study areas to approve (and, if necessary, adapt) the methodology within the specific regional contexts. In the case of the SMNP, where external interviewers were employed, extensive training and detailed instructions were offered to interviewers, in order to minimize the margin of error. As both protected areas are visited by a wide range of international tourists, the long questionnaires were elaborated in different languages (English, Spanish, French, and German) to avoid comprehension problems. In addition, the interviewers employed in Morocco were able to translate the questionnaire into Arabic as well as the local local Berber language (Tachelhit), if necessary.

5.2.1 Selection of census points

All instruments were applied at census points selected in cooperation with the protected area management, as to coincide with the main access points to the area. Census points have to be carefully selected in order to capture all relevant visitor flows, while at the same time avoiding double counts. In protected areas where visitors conglomerate mainly around a small number of attraction points, or along a few axes, a relatively small number of census points is sufficient. However, if visitors disperse over large areas, a larger number of census points is appropriate. Different activities and means of transport of protected area visitors are also to be taken into consideration, as, for instance, hikers, bikers, horse riders, or car drivers differ significantly in terms of distances (speed).

In the SKBR, access to the reserve is only possible through five entrances, of which two—the Arco Maya and Muyil—are both close to the tourist zone of Tulúm (cf. Map 4-3) and accounted for 97% of all visitor traffic in 2006 (Arco Maya: 87%; Muyil: 10%) (CONANP, various years). On the contrary, only 0.01% of all visitors entered the reserve through the southernmost access point, Pulticub. Therefore, and due to financial, personal and timely restrictions, Pulticub was not selected as a census point for this study.

Given the high frequentation of the northern part of the SKBR, Muyil, the visitor center, and the fishing village of Punta Allen were selected as census points. The visitor center was chosen instead of the entrance point at the Arco Maya, as a pretest at this site revealed that many visitors, who usually just make a quick stop to pay for the entrance fee, rejected to take part in an interview. The visitor center was considered an appropriate alternative because it is the first significant stop after the Arco Maya for individual tourists and also visited by some organized tours that arrive from Cancún or the Riviera Maya resorts. Most organized tours, however, continue directly to the fishing village of Punta Allen, the largest settlement within the SKBR, which is why this site was also selected as a census point. In addition, virtually all visitors entering the reserve via the two entrances of *KM 48* and *Santa Teresa* also continue their journey to Punta Allen.

Finally, Muyil was selected as the third census point. Muyil is a tourist attraction due to its closeness to the Mayan archaeological site of Chunyaxche, a jungle trail, and large freshwater lagoons. Two local tourism cooperatives offer boat trips on the lagoons and the water channels that connect them. Several private tour operators from Cancún, the Riviera Maya and Tulúm also offer trips to Muyil.

The total number of census points in the SKBR was relatively small due to the following two considerations:

- The number of access roads to the SKBR is very limited, and large parts of the area are inaccessible due to natural conditions (e.g. wetlands or jungle).
- Unlike in other cases where a similar methodology was applied, the SKBR management carries out their own visitor counts, as, at least theoretically, all visitors have to register and pay the entrance fee at one of the five access points before entering the biosphere reserve.

Hence, a limited number of census points was considered acceptable.

In the case of the SMNP, a total of seven census points was selected. The higher number of access roads and the general territorial conditions of the SMNP, as well as the lack of official visitation data due to the free access policy of Moroccan national parks, called for a larger number of census points and a larger size of the visitor sample compared to the SKBR, in order to obtain representative data.

Due to its proximity to Agadir, the northern part of the SMNP is more highly visited than the south, which explains the higher number of census points in the area between Oued Souss and Oued Massa. Census points include the estuaries of these two rivers, both of which are often visited by organized tours and birdwatch-

ers. Other census points included the small fishing villages of Tifnit and Sidi Toual, popular destinations for individual and package tourists as well as, especially on weekends, for local day-trippers.

The census point at Sidi R'bat was at the entrance to an upscale *Kasbah*-style hotel. Although not as highly frequented as other places, the specific clientele at this site justifies its inclusion. The southernmost census point was situated at the park entrance close to the village of Aglou, a popular destination for individual tourists traveling by camping car as well as vacation homeowners. Finally, the village of Sidi Ouassai was selected as a seasonal census point, where interviews and visitor counts were carried out during a popular religious festival in August 2007. However, it was later decided to exclude data obtained at this site from the analyses, as the travel motivations of festival attendants were not related to the national park at all.

5.2.2 Seasonal distribution of census days

The census days were chosen as to reflect seasonal variations in visitation in both case study areas. Low and high season months were defined according to secondary data on visitation (available only in the SKBR), and tourist arrivals or overnight stays in nearby destinations (e.g. Agadir), and after consultations with the respective protected area managements and other regional experts.

For the SKBR, seasons were defined as follows:

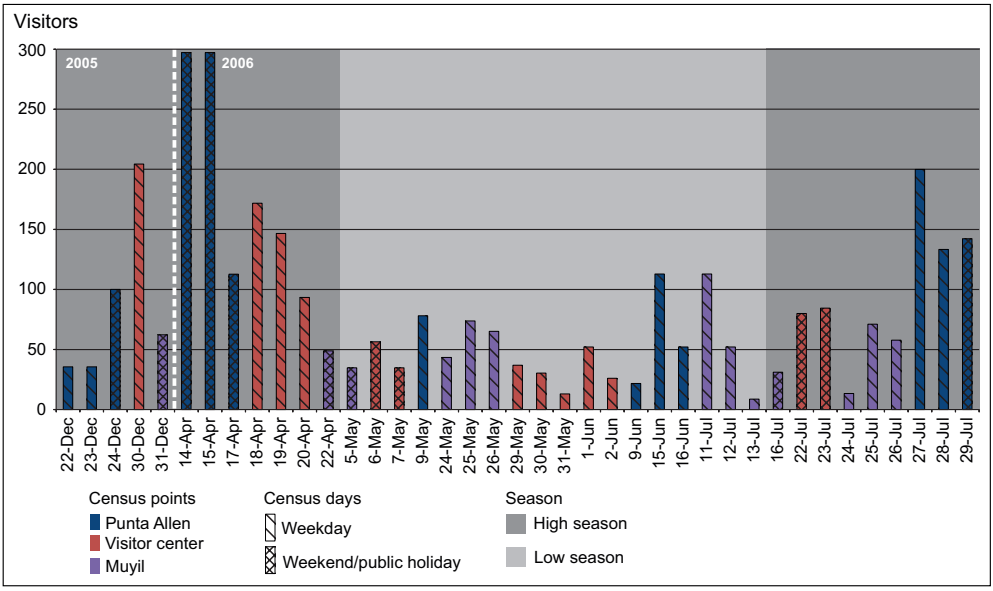
- High season I: 15 Dec–30 Apr
- Low season I: 01 May–14 July
- High season II: 15 July–31 August
- Low season II: 01 September–14 December.

In the SKBR, a total number of 39 census days was realized between 22 Dec 2005, and 29 Jul 2006 (18 during the low season and 21 during the high season). Due to personnel restrictions, parallel surveys at the three census points were not possible. However, this restriction was considered a minor shortcoming, as additional visitation data was available through official visitor counts realized by CONANP.

The same number of census days on weekdays as well as weekends/public holidays was realized at each census point (nine weekdays and four weekend days/holidays). Although the census period did not cover one entire year, the main seasons (high season around Christmas and Easter, low season between Easter and mid-July, high season in summer) were represented (cf. Figure 5-1). In total, 404 long interviews and 546 short interviews were realized.

Compared to the SKBR, no data on visitation in the SMNP was available prior to this study. Hence, a larger visitor sample of more census days distributed over a whole year, and the author's own parallel visitor counts at each of the seven census points on each census day, were necessary as to draw a representative sample and to extrapolate reliable visitor numbers. High and low seasons were defined relying on

Figure 5-1: Census days and number of visitors counted at each census point/census day in the SKBR.



Source: own survey

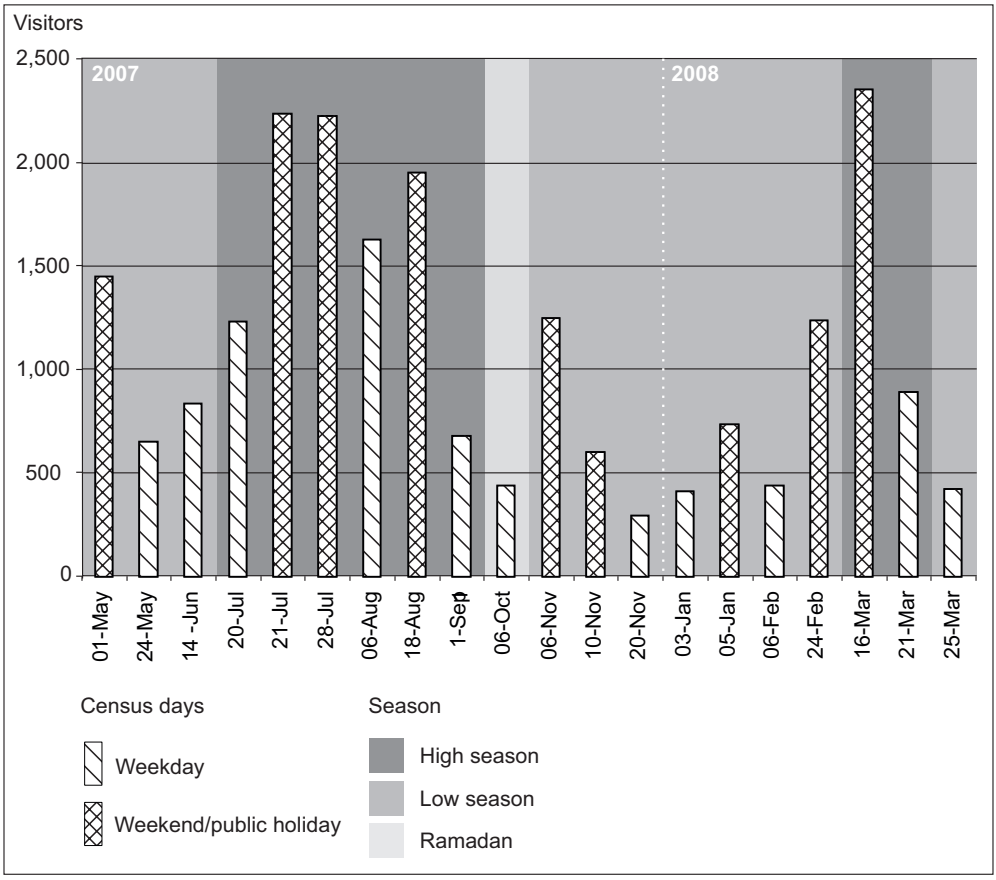
official data on tourist arrivals and overnight stays in hotels in Agadir, the region's major tourist resort and important starting point for excursions to the SMNP. Seasons should account for European as well as Moroccan major holidays, which is why Easter, as well as the Ramadan[40], were especially considered. Tourist seasons in the SMNP were defined as follows:

- Low season I (01 May 2007–30 Jun 2007
- High season I (01 Jul 2007–12 Sep 2007)
- Ramadan (13 Sep 2007–12 Oct 2007)
- Low season II (13 Oct 2007–14 Mar 2008)
- High season II (15 Mar 2008–24 Mar 2008)
- Low season III (25 Mar 2008–30 Apr 2008)

Between May 2007 and April 2008, a total number of 20 census days was realized, during which visitor counts, short, and long interviews were carried out at each of the selected census points. Figure 5-2 shows the seasonal distribution and the total number of visitors counted on each census day. A total number of 3,790 face-to-face interviews was conducted, of which 2,450 were short interviews and 1,340 were long interviews.

40 As opposed to European holidays, visitation during the month of *Ramadan* is very low, especially in 2007 when *Ramadan* coincided with the low season for international tourists in September.

Figure 5-2: Census days and total number of visitors per day in the SMNP



Source: own survey

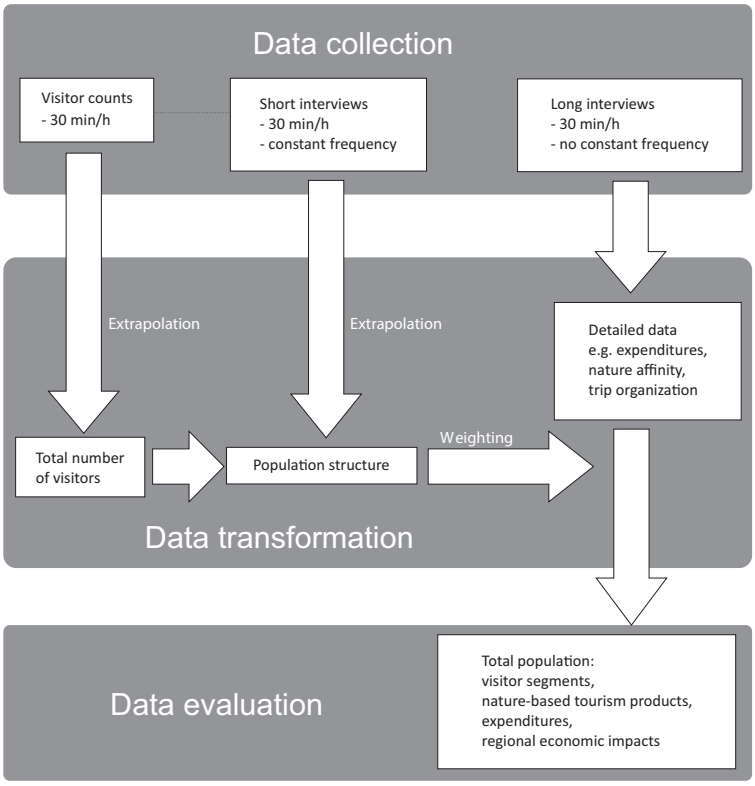
5.2.3 Application of the methodology during the census days and determination of visitor numbers

During each census day, visitor counts, short interviews, and long interviews were conducted. Visitor counts and short interviews were always carried out simultaneously during a 30-minute time period of every hour of the defined census period between 9:00 am and 5:00 pm. During the remaining 30 minutes, long interviews were conducted. Values for visitor counts and short interviews were subsequently extrapolated to the full 60 minutes. At every census point, a count direction was defined as to avoid double counts.

Figure 5-3 presents an overview of the general applied methodology in the two case study areas[41].

41 The empirical approach is an adaption of the methodology described in Job et al. (2006)

Figure 5-3: Methodology applied in the SKBR and the SMNP



Source: own drawing

To calculate the total number of visitors, it is necessary to determine the average frequentation at every census point for each type of day (e.g. *low season* and *weekday*). Hence, typical days for every census point are determined, which are representative for similar days at this site during the season.

The following steps describe the data preparation procedure:

1. The average number of visitors per minute at every census point and every census day is calculated based on the count periods (generally 30 minutes). Per-minute averages are then extrapolated to complete full hours.
2. The resulting average numbers of visitors per hour only account for a part of the complete day, i.e. the time period between 9:00 am and 5:00 pm. Hence, values are extrapolated to a core period of 12 hours (7:00 am–7:00 pm), whereby a lower frequentation is assumed for hours during the early morning and late afternoon, independently of differing frequentation patterns during the day (cf. Figure 5-4). An additional 10% is assumed for the missing periods between 7:00 am and 7:00 pm; however, this addition is only considered proportionally.

$$\sum_{Visitors\ 12\ hrs} = \sum_{Visitors} + \left(\sum_{Visitors} * 0.01 * \frac{\Delta t}{12}\right) \quad (13)$$

Where Δt is the difference between the hours represented in the census period and 12 hours.

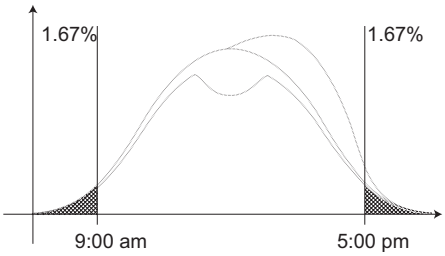
3. As to calculate the number of visitors outside the core period, seasonal adjustment factors are determined (for low season, high season, and, in the case of Morocco, the Ramadan). It is assumed that 2.5% (Ramadan), 5.0% (low season), or 7.5% (high season) of the total number of visitors during the respective core periods pass at the census points between 7:00 pm and 7:00 am.

$$\sum_{Visitors\ 24\ hrs} = \sum_{Visitors\ 12\ hrs} + (\sum_{Visitors\ 12\ hrs} * \alpha) \quad (14)$$

Where α is the seasonal adjustment factor.

Based on the average visitor numbers for different census days, representative weekdays and holidays are determined for low and high season and, in the case of the SMNP, the Ramadan. The annual total number of visitors for the respective protected area is then calculated by multiplying average visitor numbers for each representative day with the number of day types per season[42].

Figure 5-4: Hypothetical distribution of visitor numbers in the course of a day



Source: slightly modified after Job et al. (2005a: 53)

5.2.4 Short questionnaires

Short interviews were conducted simultaneously to visitor counts. The main objective was to obtain a representative sample of the demand side of nature-based tour-

42 Note that, in the case of the SKBR, official visitor numbers were also available. The number applied in this study is based on the calculation method described above, however, official numbs were used to crosscheck for plausibility.

ism in the case study areas, i.e. to determine the visitor structure. Short interviews consisted of four questions: place of residence (to distinguish between local and external visitors), number of overnight stays within the protected area (to distinguish between tourists staying overnight within the protected area, and day-trippers on a one-day excursion, either from their permanent place of residence, or from their vacation destination outside the protected area), place of accommodation, and trip organization (package tour vs. independently organized trip). Additionally, in the SMNP, where data on visitor structure were not available prior to the study, two more questions regarding the type of accommodation (e.g. hotel, camping, vacation home) and for hotel guests, hotel category (1-Star, 2-Stars…) so as to obtain more reliable weighting factors for analyses of visitor data from the long questionnaires (see below).

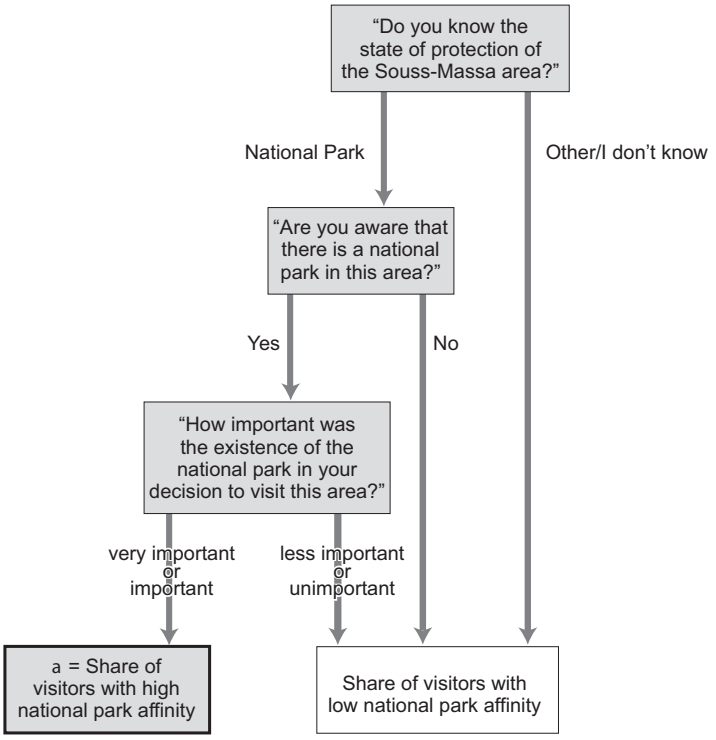
5.2.5 Long questionnaires

More detailed long questionnaires provide the basis to determine spatial behavior, trip motivation and expenditures. Long interviews were conducted subsequent to visitor counts/short interviews, also during 30 minutes. In contrast to the short interviews, no determined frequency is established, i.e. visitors were randomly approached. However, data obtained from long questionnaires was later weighted as to represent the visitor structure obtained from the representative sample of short interviews.

Long questionnaires contained 19 questions in the case of the SKBR and 21 questions in the case of the SMNP. A long interview takes around 10 minutes for overnight tourists to be completed, and a little less time for day-trippers (as some questions, e.g. regarding expenditures for and categories of accommodation, do not apply).

Questions concerning visitors' knowledge of the existence of the respective protected area and its significance for the decision to visit the region are of particular importance. Those questions were included as to analyze the role of protected area labels for a region's attractiveness, as not all visitors can be expected to have based their travel decision on the existence of a certain protected area label, in these cases "biosphere reserve" or "national park." In both case study areas, the share of visitors with high national park/biosphere reserve affinity was defined as the percentage of visitors that answered affirmatively to a series of successive questions (cf. Figure 5-5). Subsequently, by taking into account only visitors with high national park/biosphere reserve affinity, regional turnover can be calculated that is truly related to the existence of a protected area. Answering this question also helps identifying the importance of different nature-based tourism products according to visitors' travel motivations. Finally, the shares of tourists with high protected area affinity can be used as an indicator to evaluate the marketing efforts of the respective protected area management and, by comparing results from different case studies, establish benchmarks to help protected area managements improve their marketing activities.

Figure 5-5: Decision tree employed in the SMNP to determine visitors with high national park affinity[43]



Source: Mayer et al. (2010: 75)

Apart from the standardized set of consecutive questions to define visitors' biosphere reserve affinity, more general trip motivations were also asked through an open-ended question ("Please name your two most important reasons for coming to Sian Ka'an/to Souss-Massa"). Although the evaluation of open-ended questions is more time-consuming than in the case of standardized ones, they are a useful method to detect patterns of opinion, as people are free in their answers instead of being forced to choose from a limited set of fixed responses (Geer, 1988: 365, 371). For this study, open questions were considered appropriate as to analyze more general affinity toward nature. Answers to the open question were categorized and evaluated in a "mini content analysis" (Kromrey, 2006: 332-333). Visitors are attributed a high nature affinity when at least one of their answers is related to one of the "nature-related trip motivations" categories depicted in Table 5-7.

The so-defined estimation of visitors' nature affinity rates is less restrictive than the definition of protected area affinity: tourists may show high nature affinity without being interested in (or knowing about) the exact protection status of a given area

43 The decision tree used in the SKBR case study was of a similar structure, although the exact phrases were slightly different (cf. Chapters 6.2.1, 7.2.1).

(which would, per definition, exclude them from the group of visitors with high protected area affinity). The inclusion of the less restrictive nature affinity distinction seems important to identify nature tourists that are not specifically committed to nature protection, but may still be interested in natural processes, intact ecosystems and landscapes, e.g. as a setting for activities. Furthermore, this category also includes travelers who discover protected areas as tertiary nuclei *en route* (cf. Chapter 3.2.4).

The following chapter contains some general remarks on the statistical procedures applied for both case studies.

Table 5-7: Categories of travel motivations for visitors in the SKBR

Category	Description	Keywords (examples)
Nature/landscape*	General statements to attractiveness of landscape, nature, flora, fauna etc.	"Nature," "landscape," "dolphins," "birds," "bald ibis"
Nature protection/ecotourism[1]	Explicit mention of an area's status as protected area, or self-rating as ecotourist	"Biosphere reserve," "national park," "protected area," "ecotourism"
Nature-related activity[1]	Activities that are directly related to natural settings	"Birdwatching," "snorkeling," "fly fishing"
Non nature-related activity	Activities that are characterized as being less environmentally sound, or not dependent on natural settings	"Jeep driving," "adrenaline," "playing soccer"
Uniqueness	Statements related to Sian Ka'an's/Souss Massa's "uniqueness" as a tourist destination, or its distinction from the regional Fordist mass tourist resorts	"No tourists," "not Cancún"
Culture	Motives related to cultural features of Sian Ka'an	"Mayas," "ruins," "people of Punta Allen," "berber culture"
Other	Other motivations that were deemed being less relevant for the current study	"Curiosity," "recommendation," "part of a package"

Source: own survey
*Defined as nature-related trip motivation.

5.2.6 Data weighting and evaluation

The criteria *day type* (low/high season/Ramadan and weekday/weekend) and *visitor segment* (day-tripper/overnight visitor according to the respective accommodation category) were used as factors for weighting the data obtained from long interviews, e.g. visitor spending. This procedure ensures that different demand types are taken into account according to their real shares in the population in the respective case study areas, as reflected in the results of visitor counts/short interviews based on a true random sampling. A weighting variable was applied to the long interview database. The weighting variable was calculated with a mean value of unity in order not to alter the number of cases after the weighting procedure.

During the data evaluation process, some new variables were calculated, e.g. for the purpose of visitor segmentation. Depending on the characteristics of the associated data, a variety of descriptive statistics and crosstab analyses were applied. Important statistical procedures included analyses of mean differences between different visitor segments or groups. For this purpose, the one-way analysis of variance (ANOVA F-test) is the most-widely used statistical tool in academic disciplines (Mendeş and Akkartal, 2010: 715), including in tourism research (Palmer et al., 2005: 168, 172; Reid and Andereck, 1989: 22). One of the reasons for this popularity might be that ANOVA is generally seen as robust against violations of its underlying assumptions, most notably normal distribution of data (Diehl, 1977: 20). However, while the effect of violating ANOVA's normality assumption is often described as marginal, heterogeneous variances tend to have more severe consequences for the validity of the ANOVA F-test (Hartung et al., 2002). In the present study, problems of assumption violations arose as well. It was decided to rely on the Welch test instead of the F-test when variances were not homogeneous (as suggested by a significant result of a Levene test) [44]. Lix et al. (1996: 613), for instance, recommend to "avoid the F test wherever possible," while suggesting that "[t]he Welch (1951) test can be used in most one-way designs where variance heterogeneity exists." In cases when the Welch test suggested significant mean differences between groups, a Games-Howell post-hoc test was conducted as multiple comparison procedure (MCP). Janssen and Laatz (2007: 369) recommend the Games-Howell MCP for situations of heterogeneous variances, even in combination with non-normal distribution of data.

5.3 Data analysis in the two case study areas

5.3.1 Presentation of visitor numbers, visitor structure, and trip motivations

First, in both cases, general visitation data is presented and analyzed. This information include, among other, the total annual visitor numbers, seasonal distribution of visitor numbers, sociodemographic data such as the origin and age structure of visitors and some general trip-related information, e.g. the average length of stay in both case study areas. Where appropriate, the visitor structure in both protected areas is compared to other regional tourist destinations.

Second, visitors' protected area affinity rates are calculated. As pointed out in Chapter 5.2.5, determining the share of visitors with high protected area affinity is crucial for estimating a protected area's unique economic value. Furthermore, it can

44 This approach as well is somewhat pragmatic, as the Welch test, while generally described as more robust to assumption violations than the F-test, can also produce erroneous results, especially when data are nonnormal (which is, unfortunately, a rather common phenomenon in social sciences), and sample sizes are unequal. Some of the results of this study should therefore be interpreted with caution. For more detailed discussions on the ANOVA F-test and its alternatives cf., for instance, De Beuckelaer (1996), Lix et al. (1996), Mendeş & Akkartal (2010).

serve as a benchmark for the respective managements. In addition, tourists' nature affinity rates are analyzed, according to the procedure described in Chapter 5.2.6.

5.3.2 Analysis of tourist expenditures

Visitors to both protected areas are classified in distinct groups as to analyze differences in spending behavior. Segmentation schemes are based on existing approaches in the literature, rather than on own empirical data. The main reason for this is to ensure comparability between the two case study areas, as well as with regard to existing and future studies.

All in all, two different schemes for visitor segmentation and two approaches to identify the importance of nature and nature protection in visitors' travel motivation are distinguished:

1) *Forms of tourism*: institutional arrangements
    a. Origin and length of stay
        i. Local day-trippers
        ii. External day-trippers
        iii. Local overnight visitors
        iv. External overnight visitors
    b. Standardization
        i. Independent tourists
        ii. Customized tourists
        iii. Package tourists
2) *Types of tourism*: visitor motivations
    a. Protected area affinity
        i. High
        ii. Low
    b. Nature affinity
        i. High
        ii. Low

Segmentation schemes 1a) and 1b) are based on institutional arrangements such as the length of stay or the degree of standardization. They are thus related to *forms* of tourism as defined by Uriely et al. (2002: 521). Schemes 2a) and 2b), on the other hand, represent *types* of tourism that refer to less tangible psychological attributes, i.e. travel motivations.

Scheme **1a)** is based on the following two criteria:

- Origin of visitors, distinguishing locals (place of residence within the defined survey region), and external visitors (place of residence outside the survey area, either in other regions of the respective country, or abroad);
- Length of stay in the protected area, differentiating between day-trippers and overnight visitors staying at least one night in the SKBR/SMNP.

Thus, as shown in Table 5-8, four different visitor segments (local and external day-trippers, and local and external overnight visitors) can be distinguished.

Table 5-8: Visitor segments in the SKBR and SMNP

		Place of residence	
		In survey area	Outside survey area
Length of stay inside protected area	0 nights	Local day-trippers	External day-trippers
	≥ 1 night	Local overnight visitors	External overnight visitors

Source: own survey

This visitor segmentation is partly based on previous studies relying on a similar methodology (Job et al., 2003; Job et al., 2005a; Job, 2008b; Job et al., 2009) which showed that the distinction between day-trippers and overnight visitors has a significant influence on tourists' expenditures. This is often the case even when spending for accommodation is not taken into account (Job et al., 2003: 130)—a comprehensible phenomenon, as day-trippers do not, for instance, depend on catering in restaurants but rather have their meals at home, and it can be assumed that they are not as inclined as to spend money for souvenirs as people on a vacation trip.

In the case of the similar studies in Germany, however, no distinction was drawn between local and external visitors. The introduction of the place of residence as a second criterion for visitor segmentation in the present study was mainly based on the following consideration: both protected areas include several communities within their borders; it thus seems reasonable to distinguish between local visitors departing from their place of residence to visit the biosphere reserve and returning the same day, tourists who stay several days within the region, but outside the biosphere reserve (external day-trippers), and overnight visitors who spend one or several nights in the protected areas. The economic importance of the SKBR/the SMNP can be analyzed not only for the communities situated inside the borders of the protected areas, but also the degree to which adjacent communities benefit economically from these tourist attractions, as visitors spend money outside the protected areas both before and after their visits.

The second, more qualitative scheme **1b)** is related to a more general classification of overall tourist demand proposed by Pearce (2008: 154), who segments international tourists according to the degree of standardization of travel-related service arrangements, distinguishing independent, customized, and package tourists (cf. Chapter 2.1.4). This segmentation approach seems appropriate for the two case study areas, because both of which are situated in regions influenced by Fordist, post-Fordist as well as neo-Fordist patterns of tourist production and consumption. However, Pearce's original model was adapted to the specific situation of the SKBR and the SMNP.

Pearce (2008: 156) suggests package tourists to be distinguished "by their purchase of all-inclusive tours in which all single components have been bundled together as a single product and sold *in a single transaction* in the market" (my italics). This definition appears to be too restrictive in the present case study: In Cancún

and the Riviera Maya, as well as in Agadir, a variety of fully standardized day trips is offered to guests at all all-inclusive hotels, giving package tourists some options for individual choice while maintaining a risk-free, predictable vacation experience. Thus, in this study, visitors were considered package tourists when they relied exclusively on packaged tourism products for their main vacation trip as well as for one-day excursion to protected areas, regardless of whether single components of travel arrangements were purchased at home or at the destination.

By contrast, in the context of the present study, independent tourists are defined as travelers who do not rely on bundled tourist services sold by intermediaries, but rather organize their main vacation trip as well as their daily activities independently. This behavior can be generally described as more information-intensive, and travel-related decisions tend to be made in a more spontaneous way *en route* or at the destination, not prior to the trip.

Finally, customized tourists represent an "intermediate segment" (Pearce, 2008: 157) between package and independent travelers. The group of customized overnight visitors includes special interest, post-Fordist travelers, such as birdwatchers or fly-fishermen that book customized packages from highly specialized, mostly small-scale tour operators. On the other hand, visitors were considered customized day-trippers when they indicated to be on an independently organized main vacation trip, but to rely on bundled, standardized day trips spontaneously booked on-site. Note that, again, this definition differs somewhat from the one offered by Pearce, who suggests that customized tourists usually pay for *all* components of travel arrangements "in a single transaction prior to departure," although these components tend to be chosen individually "rather than already bundled into an existing package" (Pearce, 2008: 157). As the original model is intended to describe travel arrangement patterns of *international* tourists, people on a day trip that originates in their hometown, returning the same day, were not considered in this segmentation approach.

Given the case study areas' embeddedness in complex regional tourist systems, it seems to be important to include criteria that may help to analyze how Fordist, post-Fordist, and neo-Fordist regional tourism structures influence the visitor structure in the SKBR and the SMNP. Pearce's (2008) model was chosen, as it captures tourist products' various degrees of standardization, one of the main variables in the Fordist/post-Fordist dialectic (Ioannides and Debbage, 1998: 101).

One of the main research questions of this study refers to the extent to which protected natural areas can represent a unique economic value for tourist regions. Thus, in addition to the segmentation approaches described above, visitors were also distinguished according to the importance they attach to the respective protected area in particular (**2a:** protected area affinity) and to nature in general (**2b:** nature affinity). Both approaches are based on tourists' motivations and thus related to types of tourism described by Uriely et al. (2002: 521; cf. chapter 5.2.5 for a more detailed description of both segmentation schemes).

Expenditures for the different visitor segmentation approaches are analyzed in detail for different economic sectors, spending categories or business types (e.g. meals in restaurants vs. retail). The reasons for this in-depth presentation are the pi-

lot-study character of both studies and thus the non-availability of expenditure data in the two case study areas, as well as this dissertation's applied approach: regional stakeholders should obtain detailed knowledge about existing visitor and expenditure structures, as well as potential for capturing new business opportunities.

Tourist expenditures were analyzed both inside the actual protected area as well as in the larger defined study region which generally included all administrative units—municipalities (*municipios*) in Mexico and prefectures/provinces in Morocco—at the subregional level that either intersect or border the protected area. In the case of the SMNP, the province of Agadir was included too, due to its regional importance. Although not directly bordering the SMNP, the limits of the province are less than two kilometers from national park's northern border.

Analyzing not only the total amount of visitor spending but also its spatial distribution is crucial, as it can show the range of economic influence of protected areas as tourist attractions. Furthermore, analyzing the amount of tourist turnover generated in different zones and communities of a given study area may also indicate future potential for regional economic development in cases where the distribution of income from nature-based tourism is unequal (e.g., when regional mass tourist resorts benefit more from nature tourists than the communities inside the protected areas).

Expenditures in the survey region are assumed being directly or indirectly linked to the visit in the SMNP, e.g. meals in restaurants in nearby towns, or souvenirs bought before or after a day-trip. If applicable, regional accommodation expenses for one night area also taken into account, as, at least for the day of the visit, the protected area represents an essential part of the tourist experience.

After the detailed analysis of nature tourists' expenditures, the regional economic (income) effects in both case study areas are calculated as described in the following chapter.

5.3.3 Calculation of regional economic impacts

Economic impacts of tourism in the two case study areas are determined as follows: First, gross turnover generated by tourist spending is calculated by multiplying mean tourist expenditures in different economic sectors by the number of visitor days. Gross turnover generated by visitors with high affinity rates is considered separately, as one could argue that economic impact related to other visitors, for whom the existence of the protected area was not the primary reason to visit the area, might have occurred anyway in the region (Arnegger, 2010: 238).

Second, regional income effects are calculated based on *type I* income multipliers obtained from regional input-output tables. The latter were constructed from national tables, as described in Chapter 5.1.3.1. In the case of Mexico, an up-to-date national industry-by-industry input-output table is available from OECD's (2011) input-output database.

In Morocco, national input-output tables are not available, apart from a SIOT constructed as part of an OECD study in 1991 (Bussolo and Roland-Holst, 1993). The latter, however, was considered outdated and hence not employed in this study.

Instead, a new input-output table was constructed from *supply and use* tables (SUTs) for 1998-2003, which were available from HCP (2009, personal information).

As pointed out in Chapter 5.1.3, there are two different types of input-output tables: product-by-product tables and industry-by-industry tables. Each can be derived from SUTs in two different ways, either assuming a product technology (each product has the same input structure, regardless of the industry by which it is produced) or an industry technology (all products produced by an industry require the same input structure). The latter approach in combination with industry-by-industry input-output tables is recommended by Thage (2005), and employed in the present study. Thus, an industry-by-industry table based on a product technology (fixed product sales structure[45]), was compiled from the SUTs following the mathematical transformation model provided by Eurostat (2008: 349-363). As the exact distribution of transport and trade margins as well as taxes less subsidies on products over columns and rows in the new SIOT was unknown, they were distributed evenly over each cell in an iterative calculation process.

After deriving regionalized SIOTs from the national tables, inverse matrices are calculated as to obtain regional income multipliers for all relevant industries (cf. Appendix 2 and Appendix 4). Income effects in different economic sectors are then calculated separately and later added to determine total regional income effects. The latter are defined as the amount of household income (the sum of the COE row in input-output tables) generated by tourist expenditures in different economic sectors in the two case study regions.

To present income effects in a more illustrative way, income and employment equivalents are calculated too. Income equivalents are obtained by dividing the total income effects by the mean COE per capita[46]. Income equivalents thus indicate a (hypothetical) number of persons, including children and non-employed people, that could live off the income generated by visitors to the respective protected area (Job et al., 2005a: 35). Employment equivalents, on the other hand, indicate the number of regional jobs related to protected areas visitors' expenditures and are calculated dividing the total regional income effects by the mean COE per employed person.

Interregional comparisons of economic impacts can be problematic due to differing sizes and definitions of the respective regions (e.g. the total number of inhabitants or employed persons), and differing economic structures (e.g. income levels or general employment situation). Thus, in both case studies, the contribution of the respective protected area to the regional economy, i.e. the share of its respective income and employment equivalents relative to the total regional population and labor force, are also indicated.

One critical (and controversial) question in tourism impact analysis refers to the treatment of local day-trippers. As Woltering (2012: 125) observes, there are two opposed positions in the literature: Some authors are of the opinion that local vis-

45 According to Eurostat (2008: 309-310), the term "technology" is misleading when used with industry-by-industry tables, and the terminology "sales structure assumption" should be given preference in these cases.

46 For Mexico, regional COE data for the state of Quintana Roo was available from official statistics. For Morocco, in the absence of regional data, national values were applied.

itors' expenditures should not be taken into account, as they do not represent an external money injection but rather effect an intraregional redistribution of money (e.g. Crompton et al., 2001: 81; Loomis and Caughlan, 2006: 35-36). Other scholars, however, argue in favor of an inclusion of locals' expenditures, as many local visitors would opt for day-trip options outside the region if the local attraction were not existent, which would entail a financial outflow (e.g. Johnson and Moore, 1993: 287; Woltering, 2012: 127). In order to maintain the comparability of results with similar studies (Job et al., 2003; Job et al., 2005a; Job et al., 2009; Woltering, 2012), local visitors are generally included in the calculations in the following chapters. However, for the sake of completeness, an alternative estimation is also given, which does not take local visitors into account.

Finally, it should be noted that the results presented in Chapters 6.4 and 7.4 have to be interpreted with some caution for the following reasons. First, regionalized input-output tables based on non-survey methods can only provide estimations—despite the rather good performance of the employed FLQ formula. Second, available input-output tables represent the economy in an aggregated form and are in some respect less accurate than the questionnaires employed in the visitor surveys. E.g., both OECD's input-output database as well as the Moroccan official statistic do not distinguish between hotels and restaurants, but rather includes an aggregated "hotels and restaurants" sector, which also leads to a certain loss of accuracy. In conclusion, the results described in Chapters 6.4 and 7.4 should be interpreted as approximations rather than exact values.

5.4 Interim summary

This dissertation deals with tourism in protected areas in proximity to mass tourist resorts in developing countries, and attempts to assess the impact of such tourist bubbles on the visitor structure and economic impacts of nature-based tourism in these protected areas. The methodology presented in this chapter was selected so as to ensure comparability to other case studies while avoiding the need to purchase costly secondary data from private providers. The input-output approach is one of the most widely used methods in tourism impact studies. In the absence of regional input-output data, the employed FLQ formula is considered to represent a suitable alternative to cost- and time-intensive own surveys on industries and linkages in regional economies.

The next two chapters describe the study results for the SKBR and the SMNP, following a parallel structure. As pointed out above, emphasis is given to a detailed presentation of tourist expenditures for a variety of visitor segmentation approaches based on the relevant literature, so as to show the heterogeneity of the visitor structure in both protected areas under the influence of nearby Fordist tourist bubbles.

6 Results: Sian Ka'an Biosphere Reserve

6.1 General data on visitation in the SKBR

6.1.1 Visitor data of the Comisión Nacional de Áreas Naturales Protegidas

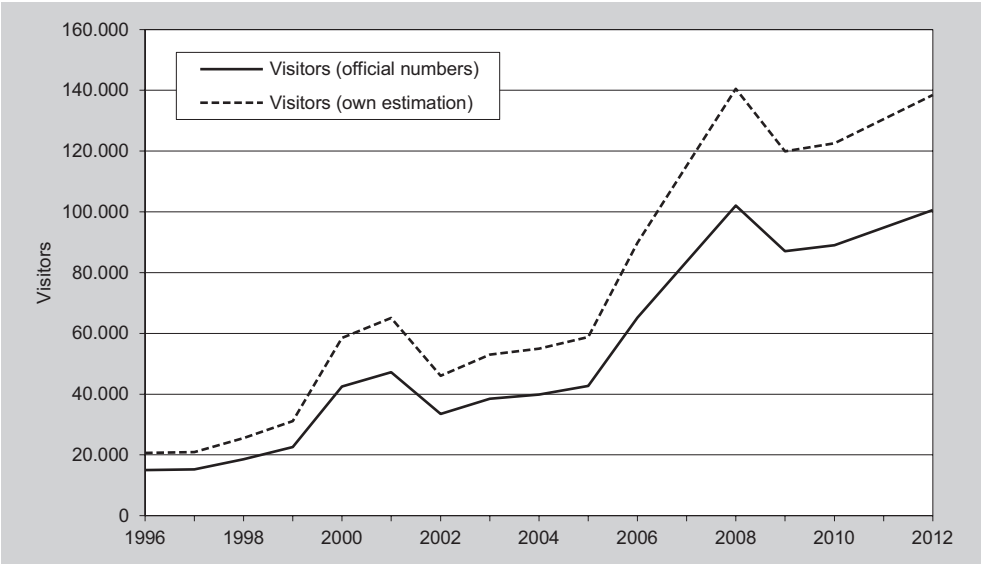
As stated before, CONANP realizes official visitor counts at the five access points to the SKBR. Technically, all visitors should be registered and counted when paying the entrance fee at each entrance. In practice, however, this is not always the case. For example, entrance fees are usually only collected in the daytime, although some relevant types of visitors enter the reserve during the night or early in the morning, including most of the fly-fishermen. Visitors passing in cars with local license plates are also commonly not registered. People living at the borders of the SKBR are exempted from paying which also applies to owners of secondary residences or vacation homes, although this group would by be considered tourists according to most definitions, and they generate financial inflows to the region through their expenses *in situ*. In addition, there are times when access points are unstaffed due to personnel and time restrictions. At the reserve entrance in Muyil, only visitors that go on an organized boat trip with one of the local tourism cooperatives are counted and charged the entrance fee, while people visiting the shore of the lagoon are not considered in the official statistics.

As a consequence, official visitation data tends to underestimate visitor numbers. In the following, this study refers to own visitor counts realized in 2005-2006, which are approximately 40% higher than official numbers. However, official information on visitor structure was found to be fairly accurate, given that visitor counts at the Arco Maya, the entrance that accounts for the highest frequentation, are relatively reliable, this entrance being the only one that is usually staffed with two rangers.

6.1.2 Number of visitors, evolution since 1996, and seasonal distribution

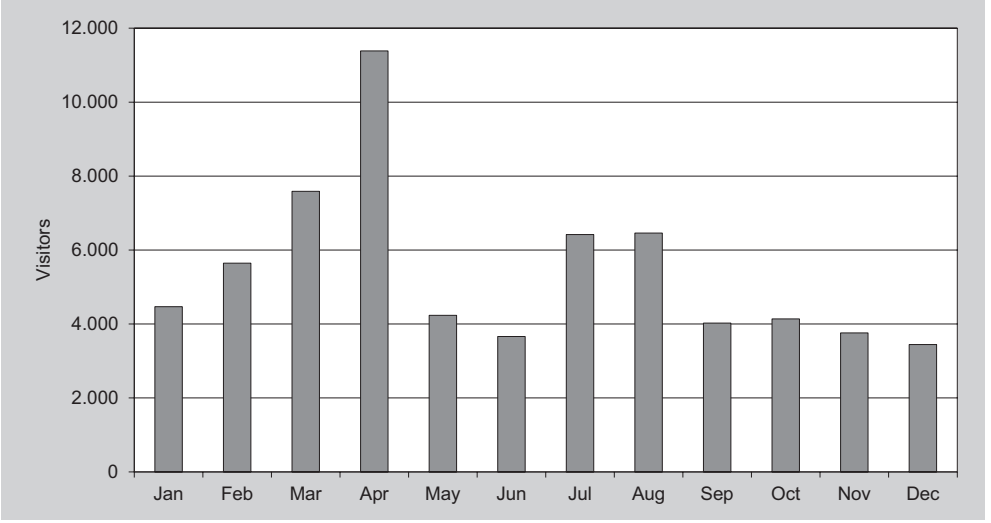
In 2006, 65,207 visitors were officially registered in the SKBR—as compared to an estimated 89,764 visitors based on the author's own counts realized for this study. Over the previous ten years, the number of visitors has increased considerably. This increase is without a doubt related to the general tourist development of Quintana Roo, most notably the adjacent Riviera Maya, which was established in the mid-1990s (cf. Chapter 4.2.3). Figure 6-1 depicts an overview of the evolution of visitor numbers according to the official counts, and its evolution 1996-2012. Note that the continuous line represents official numbers. The dotted line stands for the visitor numbers based on own estimations extrapolated from study results in 2005-2006.

Figure 6-1: Evolution of yearly visitor numbers in the SKBR, 1996-2012[47]



Sources: CONANP (various years); own survey

Figure 6-2: Seasonal distribution of visitor numbers in the SKBR in 2006



Source: CONANP (2007)

47 Note that missing values (2007, 2011) are interpolated.

The short drop in visitation numbers after 2001 is certainly related to the global crisis of tourism after the terrorist attacks in New York City and Washington D.C. In addition, at the same time, contracts between local cooperatives and some external tour operators which used to bring a high number of visitors to the reserve were cancelled (Hüttl, 2006: 47). Visitor numbers increased substantially after 2006, but dropped in 2009 when Mexican tourism was hit by the H1N1 ("swine flu") pandemic (Gibbs, 2009).

Figure 6-2 shows the seasonal distribution of visitors in the survey year of 2006 (official data). The peak in April is related to the main vacation season in Mexico during *Semana Santa*, the Holy Week. May and June are below average, while visitor numbers begin to rise again in July and August, the main season in many European countries and in the USA and Canada.

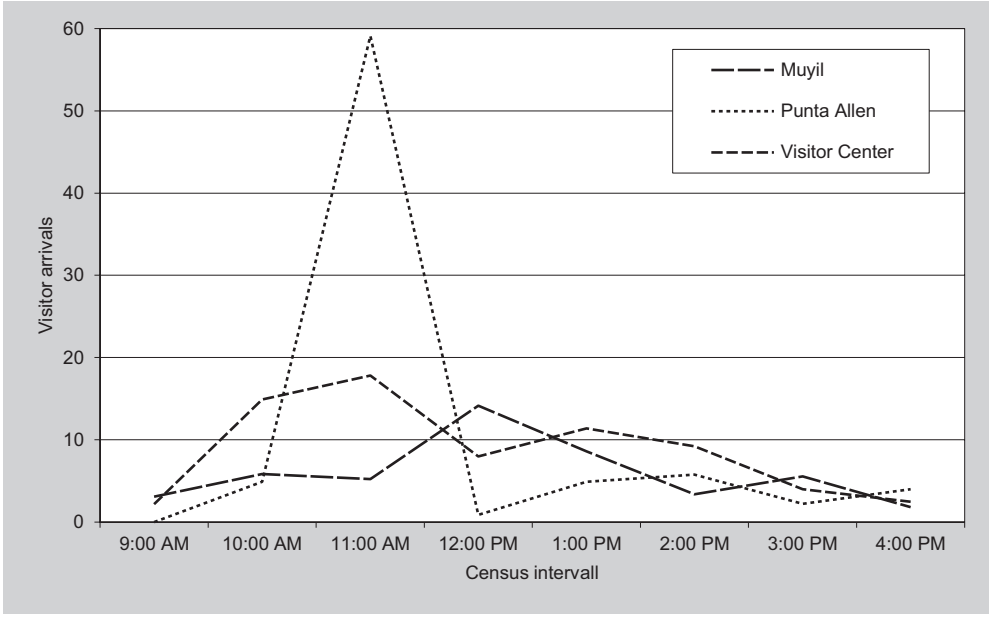
After the summer main season, visitation increases, whereby it is noteworthy that the Christmas season in 2006 was relatively weak as compared to other years.

In total, the distribution of census days in December and January, as well as between April and August, are considered covering an acceptable pattern of different seasons.

The average frequentation during the day also differs between the three census points (cf. Figure 6-3).

While the number of visitors at the visitor center and in Muyil is relatively balanced over the day, a marked peak can be observed in Punta Allen before noon.

Figure 6-3: Average number of visitor arrivals at the census points in the SKBR during the census core time (9:00 am–5 pm)



Source: own survey

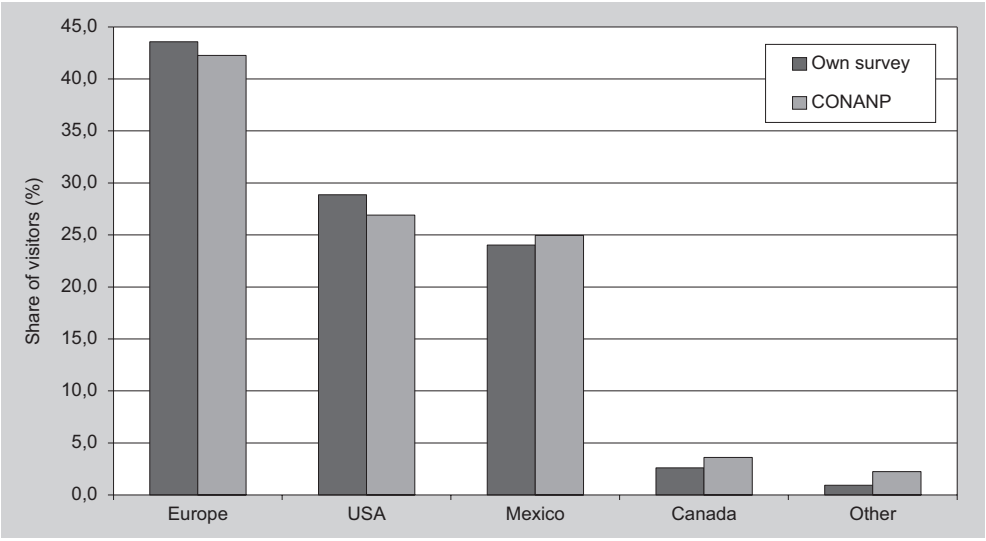
Package tour groups from Cancún and the Riviera Maya usually start at the resort hotels early in the morning and arrive in Punta Allen between 11 am and 12 pm almost at the same time. The average arrival numbers are even higher during the high season, which can imply ecological stress, especially for marine animals such as dolphins and sea turtles due to a high concentration of boat tours. In addition, overcrowding can interfere with the tourist experience, especially since many visitors expect to visit a nature-based destination that offers a contrast to the regional mass tourist settings.

6.1.3 Origin of visitors

The origin of visitors is the only variable registered in CONANP's visitation data. It is thus the only information from the official statistics to be compared with the author's visitor survey and to check the plausibility of the author's survey results. A comparative analysis of data on visitor origin from the two surveys reveals similarities in terms of rank and shares of the most important regions of origin (cf. Figure 6-4). The average difference between the values from the two surveys is 1.3%. Thus, the author's visitor survey is considered fairly representative, and its results are considered in the following.

This research's survey results indicate that 43.6% of all visitors are Europeans (notably from Spain, Germany, Italy and France), 28.9% are from the United States, 24.0% are from Mexico, 2.6% are from Canada, and 0.9% are from other countries[48].

Figure 6-4: Comparison of visitor origin according to data from CONANP and own survey results

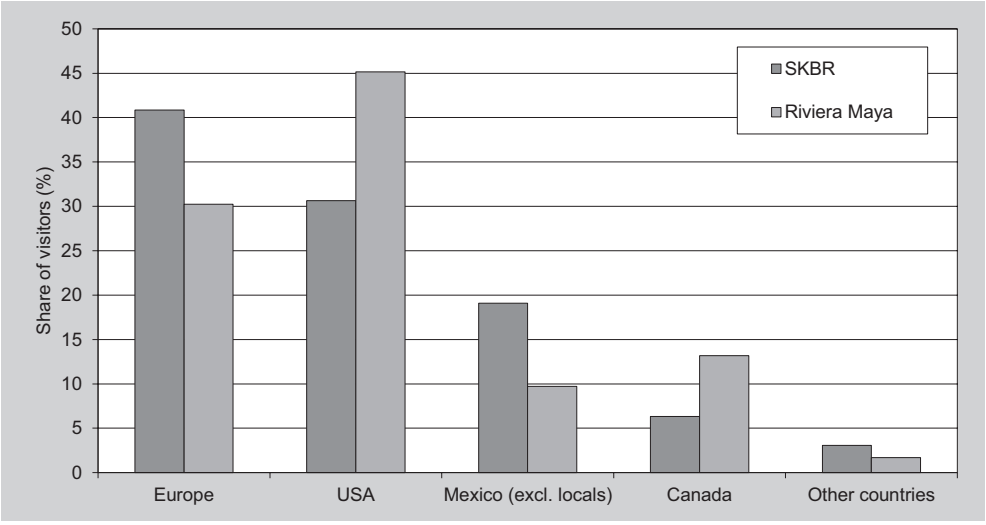


Sources: CONANP (various years); own survey

48 Note that, in contrast to CONANP, in the author's survey visitors' *residence* was registered, not their *nationality*. However, it can be assumed that the difference is marginal in practice.

The visitor structure in the SKBR differs significantly from the adjacent Fordist tourism destinations of the Riviera Maya (cf. Figure 6-5). In order to ensure comparability, non-local visitors are excluded for this analysis. In the Riviera Maya hotels, tourists from the United States predominate with a share of 45.2%. Canadians are also more strongly represented, while the shares of Europeans and domestic tourists are less, compared to the visitor structure in the SKBR.

Figure 6-5: Origin of non-local tourists in the SKBR and the Riviera Maya (2006)



Sources: own survey and FPTRM (2006)

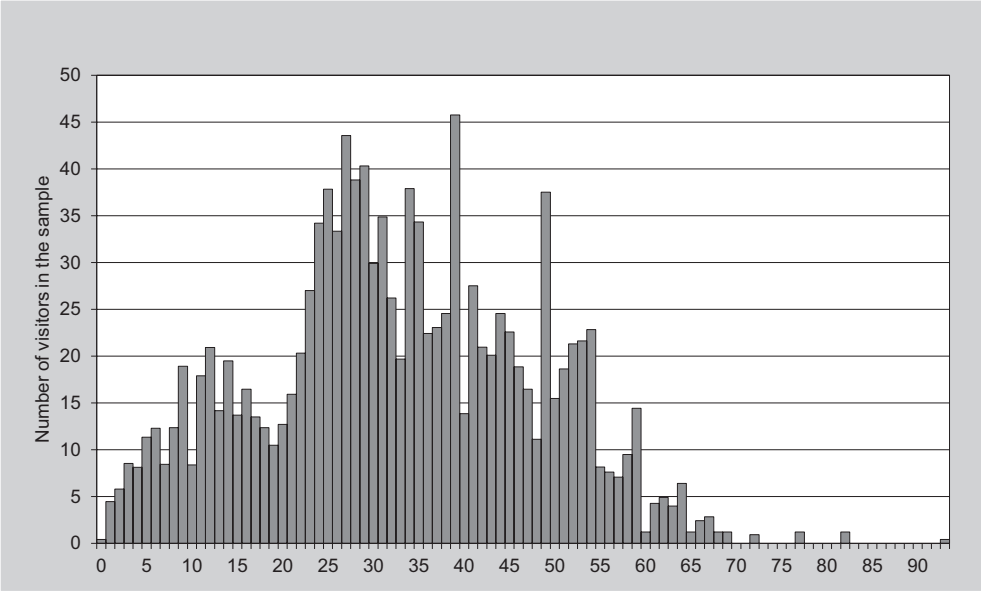
These figures support the notion that the SKBR is placed on the more "alternative" end of the spectrum of tourist destinations in the region. As Torres (2000: 151) suggest, alternative destinations in Quintana Roo are commonly characterized by a more heterogeneous visitor structure (notably a higher share of European visitors), and associated with post-Fordist patterns of tourism production and consumption.

6.1.4 Sociodemographic visitor data and average length of stay in the SKBR

An analysis of the study sample population's age data reveals a distribution skewed toward the younger end of the spectrum (cf. Figure 6-6). The mean age of the sample population is 33.7 years, with a median of 33. In total, the study sample's age ranges form 1 to 94. 76.8% of all visitors to the SKBR are aged 45 or younger.

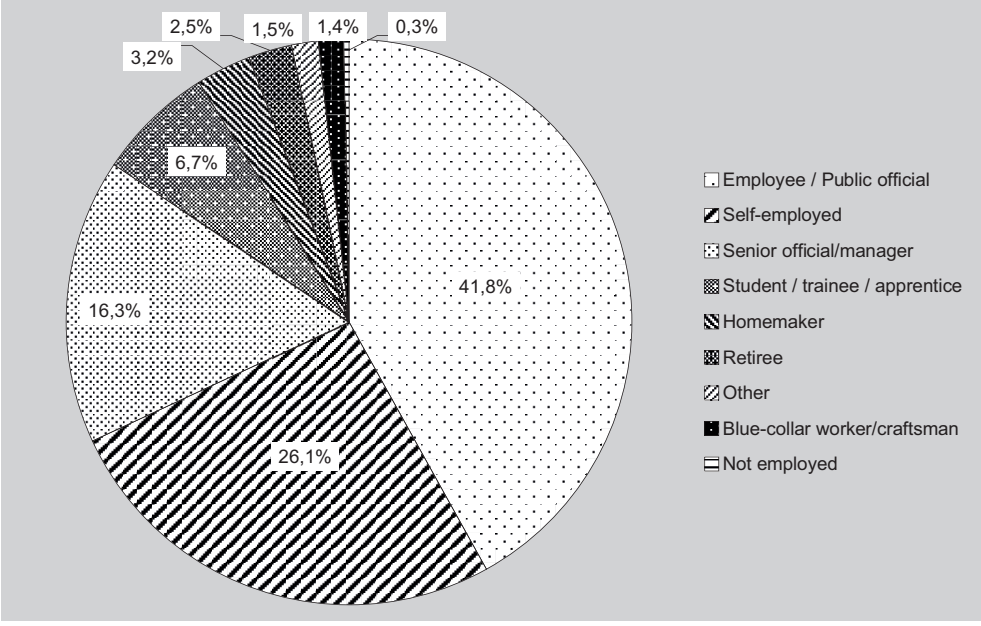
Several factors contribute to the young average age of visitors in the SKBR. First, Sian Ka'an is a popular destination for Mexican families visiting friends or relatives, notably around Easter, and a popular destination for family day trips for the local population on weekends and holidays. Furthermore, the mass tourist destinations

Figure 6-6: Age distribution histogram of visitors to the SKBR



N = 1,234; Mean = 33.7; Median = 33; Std. Dev. = 12.56*; Source: own survey
*Note that the sample size for age data differs from the general study sample size (N = 403), as age data was logged for all group members, not only for interview partners.

Figure 6-7: Occupation groups in the visitor sample in the SKBR



Source: own survey

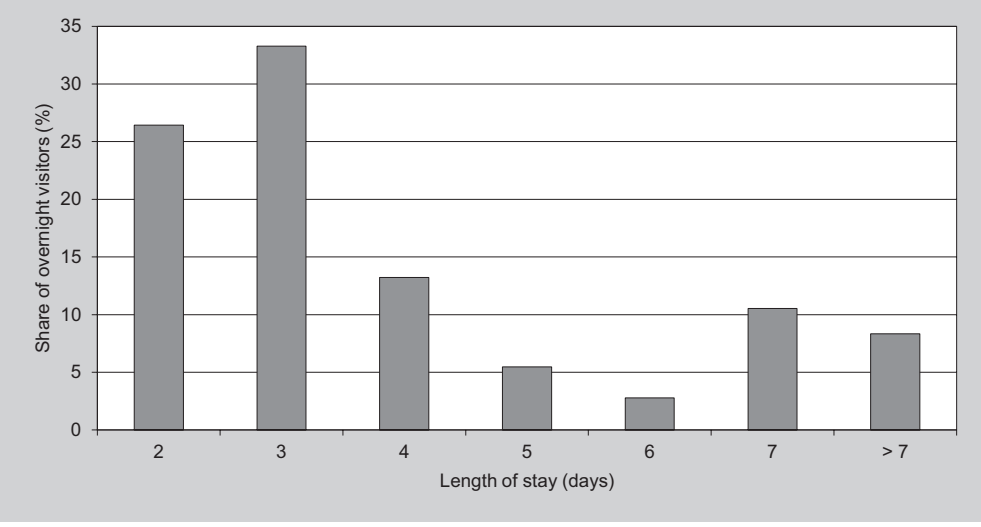
of Quintana Roo are generally attractive for a younger clientele, i.e. through bargain packages attractive for young families and special spring break or summer break offers for college students. Thus, the SKBR visitor sample reflects general age patterns of tourists in Quintana Roo, i.e. as observed in a survey among tourists at Cancún International Airport with an average age of 34.6 years (Torres, 2000: 303).

Regarding the visitors' occupations, the largest group classifies itself as employee or public official. Other large groups include self-employed persons and a relatively large proportion of the visitor sample is classified as senior official or manager. The small share of retirees reflects the general youthful visitor profile.

The majority of visitors stays only one day in the SKBR; only 11.6% are classified as overnight visitors. As for the regional economy, a low share of overnight visitors is generally considered problematic, as day-trippers tend to have significantly lower daily expenditures, not only because they do not spend any money for accommodation but also because of lower expenditures in other sectors such as restaurants or souvenir shops (Job et al., 2003: 130).

Overnight visitors stay an average of 4.4 days in the SKBR (Median = 3; Std. Dev. = 4.5). Figure 6-8 indicates that the mode for the length of stay data set for overnight visitors is 3 days. Only 8.3% of visitors stay for one week or longer.

Figure 6-8: Frequency distribution of overnight visitors' length of stay in the SKBR



Source: own survey

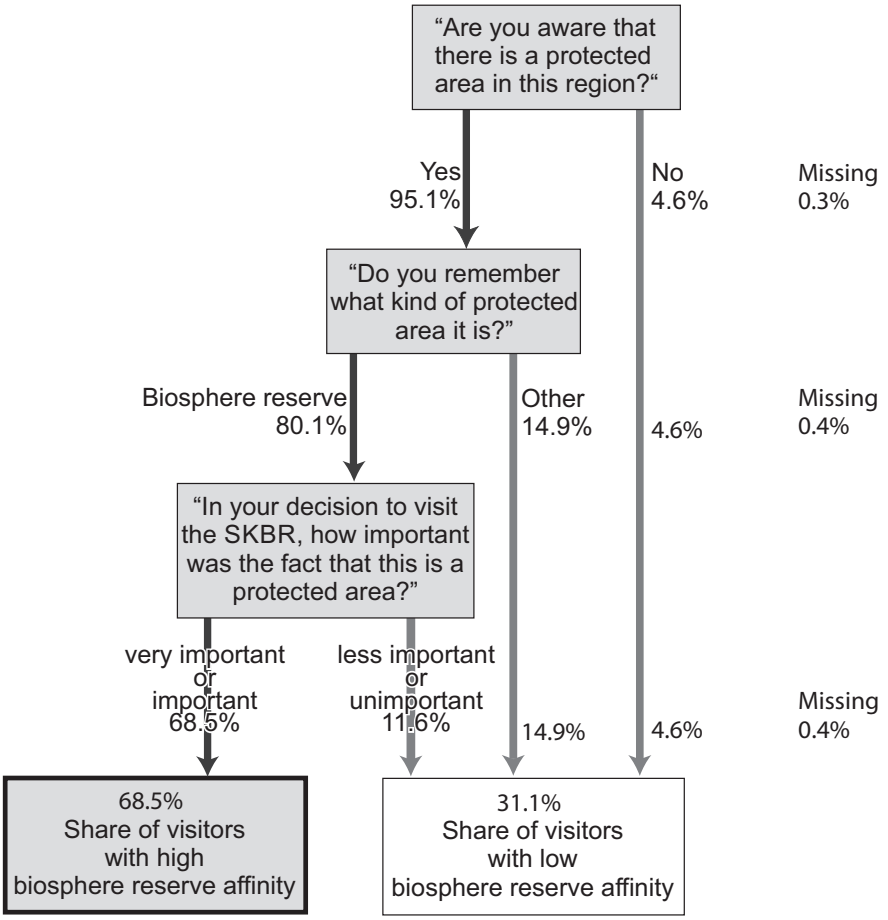
6.2 Biosphere reserve affinity and travel motivations of visitors in the SKBR

6.2.1 Biosphere reserve affinity

As described in Chapter 5.2.5, visitors were distinguished according to their commitment to nature conservation, differentiating between high and low biosphere affinity as defined by the responses to three consecutive questions.

Following this definition, more than two-thirds of tourists in the SKBR can be classified as visitors with high biosphere affinity (cf. Figure 6-9). Remarkably, over 95% of all visitors know about the protected area and over 80% are able to determine the correct protection status (biosphere reserve). Of the respondents who answered affirmatively to the first two filter questions, only 11.6% stated that the status of Sian Ka'an as a protected area was of minor or no importance for their visit. Overall, the share of visitors with high biosphere reserve affinity is 68.5%. The highest average biosphere reserve affinity, 70.3%, was recorded at the census point at the visitor center. It could be argued that people with both interest and knowledge in protected areas may be specifically prone to inform themselves at information centers. However, the recorded mean differences between the census points were not statistically significant. Biosphere reserve affinity rates at Muyil and Punta Allen were 69.7% and 65.9% respectively.

Figure 6-9: Decision tree and biosphere reserve affinity in the SKBR



Source: own survey

Such high affinity rates are an astonishing result. In comparable surveys based on a similar methodology in German national parks, the highest national park affinity rate was reported with 45.8% (in the Bayerischer Wald National Park, Germany's oldest national park) (Mayer et al., 2010: 76). Affinity rates in the SMNP are also considerably lower, as will be discussed in 7.2.1.

Generally, high protected area affinity rates can be seen as evidence for successful marketing efforts by the park management and may serve as a benchmarking tool to compare and evaluate different protected areas. Thus, the result for the SKBR can, at least partly, be attributed to successful environmental education and marketing efforts of CONANP, the biosphere's management body.

However, high affinity rates in the SKBR may partly be influenced by other factors too. First, in contrast to Moroccan (or German) national parks, biosphere reserves in Mexico are not subject to a free-access policy. As pointed out before, all visitors must—technically, at least—register when entering the SKBR and pay the entrance fee. Paying visitors receive a bracelet that reads *CONANP* and *Sian Ka'an Biosphere Reserve*, which in part explains the high share of visitors that know the correct protected area category. The name of the SKBR is also prominently displayed at all access points.

Finally, a bias toward visitors with high biosphere reserve affinity can be expected due to social desirability. However, this would probably be the case among all societies underlying a certain degree of Western influence, generally favoring environmentally beneficial, "sustainable" behavior and attitudes.

While the affinity rates reported for the SKBR are high compared to European case studies as well as the SMNP, they are still lower than figures reported for some US national parks. For instance, 77% of visitors in Yosemite National Park, and 80% in Zion National Park indicated that the respective park was the primary reason to visit the area (Cook, 2011: 3; Stynes, 2008: 6).

6.2.2 Nature affinity

Apart from the standardized set of consecutive questions to define visitors' biosphere reserve affinity, more general nature affinity was assessed through an open-ended question ("Please name your two most important reasons for coming to Sian Ka'an," cf. Chapter 5.2.5).

Answers categorized as "other" were the most numerous (37.0% of the total number of mentions)[49]. However, most of the given answers in this category were somewhat meaningless (e.g. "curiosity," "to get to know") or at least irrelevant for the present study. The second highest number of mentions account for answers belonging to the "nature/landscape" category: 36.0% of all responses referred to the role of the natural attractiveness of Sian Ka'an as one of the most important reasons to visit

49 Note that percentages given in this paragraph refer to the total number of given answers (N = 701), not the number of visitors in the sample (N = 403). Interviewees could name one or two reasons, or none at all.

the area. Other categories were of less importance: 7.4% of all answers highlighted Sian Ka'an's "uniqueness," and its distinctiveness as compared to conventional mass tourist destinations, e.g. Cancún. 7.2% explicitly referred to its status as a protected area or "ecotourist" destination, a venue for nature conservation and sustainable forms of traveling. 5.9% of answers included nature-related activities, 5.4% cultural features, most notably the archeological site of Muyil. 1.0% of all answers named less environmentally sound activities as primary motivations, mostly the driving of all-terrain vehicles on the dirt road between Tulúm and Punta Allen as part of some standardized package day trips.

Table 6-1: Most important reasons to visit Sian Ka'an: frequency and share of total answers

Categorized motivation	N	%
Nature/landscape*	252	36.0
Conservation/ecotourism*	50	7.2
Nature-related activity*	42	5.9
Non nature-related activity	7	1.0
Uniqueness	52	7.4
Culture	38	5.4
Other	259	37.0
Total answers	701	100.0

Source: own survey
* Defined as nature-related trip motivation (cf. Table 5 7).

All in all, 81.3% of the visitors in the sample named at least one nature-related trip motivation (cf. Table 6-1), a higher share than the one of visitors with high biosphere reserve affinity. Interestingly, there is no statistically significant association between biosphere reserve affinity and nature affinity. Two main reasons may be responsible for this apparent contradiction. First, to some visitors, Sian Ka'an's natural attractiveness might be the main reason to visit the area without knowing about its (exact) status as a protected area. Second: Some people visit Sian Ka'an to engage in nature-related activities (e.g. fly-fishing) for which a certain natural setting is highly important, while the state of protection is considered less relevant.

However, it has to be stated that the overall majority (55.9%) of the visitor sample is characterized by both high biosphere and nature affinity.

6.3 Visitor segmentation and daily expenditures in the SKBR

6.3.1 Segmentation of visitors in the SKBR according to origin and length of stay

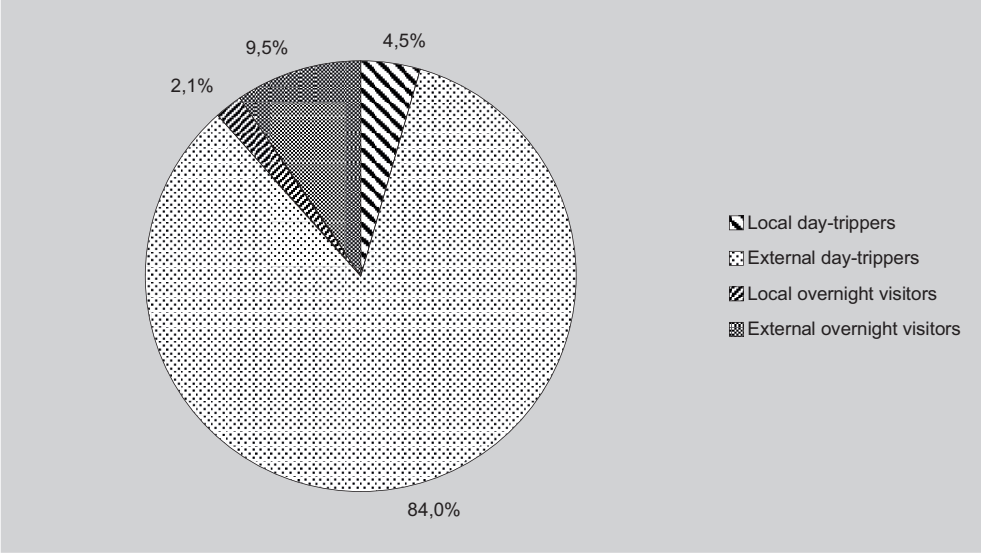
As described in Chapter 5.3.2, four different visitor segments were distinguished according to visitors' origin and length of stay (scheme 1a):

– local day-trippers,
– external day-trippers,
– local overnight visitors,
– external overnight visitors.

Visitors are classified as *local* and *external,* depending on whether their place of residence is within or outside the survey region (e.g. Benito Júarez with the agglomeration of Cancún). Thus, the segment of external day-trippers includes both tourists staying in destinations in Quintana Roo such as Cancún or Playa del Carmen who visit Sian Ka'an on a one-day excursion, as well as Quintana Roo residents living in non-survey region municipalities (e.g. Benito Júarez with the Cancún agglomeration) who depart from their hometown to the SKBR, returning the same day. The latter, however, comprise only 3.7% of the total sample population.

According to the criteria described above, the shares of the different visitor segments are as follows (cf. Figure 6-10):

Figure 6-10: Shares of local/external day-trippers/overnight visitors in the SKBR (N = 403)



Source: own survey

Based on a total number of 89,764 visitor days, the SKBR is visited annually by 79,381 day-trippers (4,000 of which are locals and 75,380 external visitors) and 10,383 overnight visitors (1,861 locals, 8,522 external overnight visitors).

Local overnight visitors stay an average time of 3.4 days in Sian Ka'an, while external overnight visitors stay 4.7 days.

External day-trippers are less likely to have a high biosphere reserve affinity than all other visitor segments (however, the statistical association is rather small: Cramér's V = 0.165; $p < 0.05$). This finding is partly related to the fact that they are not as well informed about the protected area as other visitor segments: while local visitors were all able to name the exact protection status (biosphere reserve), the share was 94.9% among external overnight visitors and 81.8% among external day-trippers. On the other hand, the share of visitors with high nature-affinity is higher (Cramér's V = 0.170; $p < 0.05$) among external day-trippers (82.6%) than among other segments (between 61.1% and 65.8%).

6.3.2 Expenditures of local/external day-trippers/overnight visitors in the SKBR

In total, visitors spend an average of USD 18.26 per day within the SKBR. However, expenditures vary considerably between the different visitor groups as defined above. Local day-trippers spend the least of all groups (USD 4.66). External day-trippers have higher mean daily expenditures, with USD 14.65. As can be expected, overnight visitors spend more than day-trippers: USD 22.36 in the case of local and USD 55.70 in the case of external overnight visitors.

A Welch test reveals statistically significant differences in mean daily expenditures between visitor segments ($F(3,27.042) = 14.340$, $p < 0.001$). A Games-Howell multiple comparison, recommended for unequal sample sizes and unequal variances (Toothaker, 1992: 66) suggests that no statistically significant mean differences exist between local overnight visitors and any of the other three visitor segments, which is most likely related the small sample size of this group. However, all other segments' mean expenditures differ significantly (cf. Table 6-2).

Table 6-2: Mean daily expenditures of local/external day-trippers/overnight visitors in the SKBR

	a) Local day-trippers	b) External day-trippers	c) Local overnight visitors	d) External overnight visitors	Total
N	18	338	8	38	403
Expenditures (USD)	$4.66^{b,d}$	$14.65^{a,d}$	22.36	$55.70^{a,b}$	18.26

Letters indicate that group means are significantly different at $p < 0.05$ according to the Games-Howell test. Source: own survey

The structure and total amount of daily expenditures of all visitor segments are depicted in Figure 6-11 and described in brief in the following sections.

Local day-trippers account for the lowest daily expenditures per person in the SKBR. This is by no means a surprising result, as locals tend to purchase most of their convenience goods at home and the day trip to the SKBR can be classified as recreation, not tourism. Expenditures in restaurants make up the largest share (64.3% or USD 2.99) of local day-trippers' spending—however, given the small total amount, even restaurant spending sums up to only USD 2.45 on average per person. The other categories are almost insignificant (e.g. organized tour: USD 1.05, tip: USD 0.26). As many as 58.8% of all local day-trippers indicated not to spend any money within the SKBR, which was the highest share of all visitor segments.

External day-trippers on average spend around 10 dollars more per person per day than local day-trippers, a total of USD 14.65. 85.1% of the total mean expenditures (i.e. USD 12.47) is spent on organized tours. This relatively large share can be explained by the fact that as many as 42.3% of all external day-trippers visit the SKBR with a one-day package excursion, by far the highest share of all visitor segments. Package tours are mostly offered by private companies operating in the Riviera Maya tourist resorts. Those packaged excursions generally include a boat trip and lunch provided by a local cooperative either in Muyil or Punta Allen, in which case the cooperative receives a commission of USD 21.50 per person. Hence, for visitors on organized day-trips purchased outside the SKBR, an amount of USD 21.50 was included in local tour sales.

Organized day-trips tend to be of the all-inclusive type, including a boat trip inside the reserve, a meal in a local restaurant and the renting of equipment such as snorkeling gear. This in turn means that participants have little incentives (and, in fact, little time, due to the large distances and poor road conditions within the SKBR) to make additional expenditures. Thus, spending in other categories is low: USD 1.12 for the admission to the SKBR, USD 0.81 in restaurants apart from the included meals, and only USD 0.18 for tips.

The comparatively low average expenses for the admission to the SKBR is surprising, as, in theory, all non-local visitors have to pay this entrance fee of USD 1.80; however, one third (33.4%) of all external visitors stated that they did not pay—an indication that access controls by the park rangers could well be improved.

Local overnight visitors, who make up only 2.1% of all visitors, spend on average USD 22.36 per person per day within the SKBR. Interestingly, the proportion of the total expenditures spent in restaurants (50.5% or USD 11.29) is higher than for accommodation (31.1% or USD 6.95)—probably due to the fact that many (33.3%) local overnight visitors stay with friends or family members, e.g. in Punta Allen. During *Semana Santa*, camping on the beach in Punta Allen is also popular among local visitors. 60.0% of local overnight visitors did not spend any money on accommodation—and 25.0% did not spend any money at all during their stay in Sian Ka'an. However, even without taking accommodation expenditures into consideration, local overnight visitors spend more per person per day in the reserve than either segment of day-trippers. Other, much less important categories include organized tours (USD 1.93, or 8.6% of the total expenditures) or tips (USD 1.05 or 4.7%). The

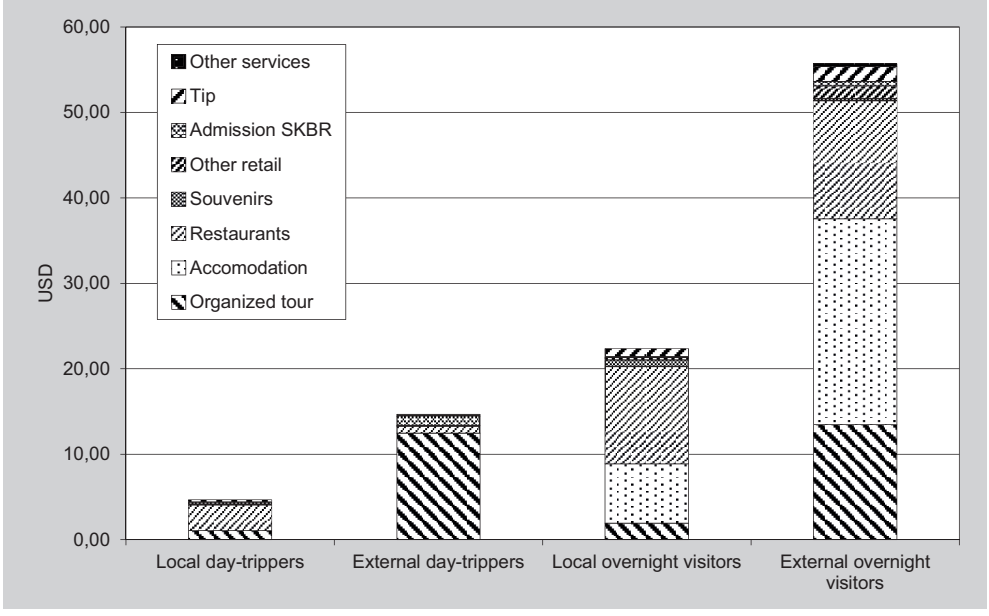
souvenirs category seems of little importance (USD 0.75 or 3.4%); however, it is noteworthy that local overnight visitors' mean expenditures on souvenirs bought within the SKBR are higher than those of the other visitor segments (probably due to the fact that external visitors prefer to buy souvenirs in hotel towns ouside the SKBR, which tend to offer a wider selection).

External overnight visitors' daily expenditures, USD 55.70 per person per day, are almost twice as high as the ones of local overnight stayers. The largest share, 43.2% or USD 24.08, accounts for the accommodation within the SKBR. USD 13.75 is spent in restaurants, and USD 13.48 on organized tours.

The other categories are of much less importance. External overnight visitors spend on average USD 1.76 (3.2%) per person per day on tips, USD 1.53 (2.7%) on retail, and only USD 0.52 (0.9%) for the admission for the SKBR. The low expenditures for admission can partly be explained by the fact that external overnight visitors stay several days in Sian Ka'an, but only pay the entrance fee once. Surprisingly, more than half of all external overnight visitors (52.6%) indicated that they did not pay any entrance fee at all, although they are theoretically obligated to do so. This figure clearly indicates that not all visitors are accurately registered by the park rangers when entering the reserve.

Figure 6-11 depicts the structure and total amount of expenditures of all visitor segments.

Figure 6-11: Expenditure structure of local/external day-trippers/overnight visitors inside the SKBR



Source: own survey

6.3.3 Expenditures of local/external day-trippers/overnight visitors in the SKBR survey area

As described in the previous section, some visitor segments account for very low average expenditures within the SKBR, most notably the segments of local and external day-trippers. However, many day-trippers spend a considerable amount of money before and after entering the reserve. Reasons are, among others:

- many (external) day-trippers to Sian Ka'an are, in fact, tourists staying in hotels (and thus generating turnover) outside the biosphere reserve;
- shopping or dining options are more diverse outside the reserve;
- consumption of any type is probably not among the priority list of many nature-based tourists during day-trips to protected areas.

Many if not the majority of these expenditures are directly or indirectly linked to the visit to the SKBR. Thus, in the following, visitor spending is analyzed including *all* expenditures within the study region, which encompasses all municipalities that adjoin the SKBR (cf. Chapter 5.3.2). Tulúm is the most important tourist destination in the study area, however, other places such as Muyil, Felipe Carrillo Puerto or Mahahual are also worthy of mention.

Visitors of the SKBR spend an average of USD 50.48 per person per day in the survey region, more than twice as much as the average expenditures in the SKBR alone. This underlines the SKBR's economic importance, not only for the communities within its borders but also for the regional tourism-driven economy.

The spending behavior differs significantly between visitor segments (Welch test: $F(3,30.197) = 28.496$, $p < 0.001$). A Games-Howell post-hoc test reports statistically significant differences between local day-trippers and both external day-trippers and overnight visitors to Sian Ka'an (cf. Table 6-3). No statistically significant differences exist between the average amount of expenditure of external day-trippers and overnight stayers: many of the former are, in fact, tourists staying outside the SKBR but still within the survey area (see below).

Table 6-3: Mean daily expenditures of local/external day-trippers/overnight visitors in the SKBR survey area

	a) Local day-trippers	b) External day-trippers	c) Local overnight visitors	d) External overnight visitors	Total
N	18	338	8	38	403
Expenditures (USD)	$9.17^{b,d}$	52.13^{a}	23.71^{d}	$61.14^{a,c}$	50.48

Letters indicate that group means are significantly different at p <0.05 according to the Games-Howell test. Source: own survey

In the following, the regional expenditure structures of the four visitor segments are briefly described.

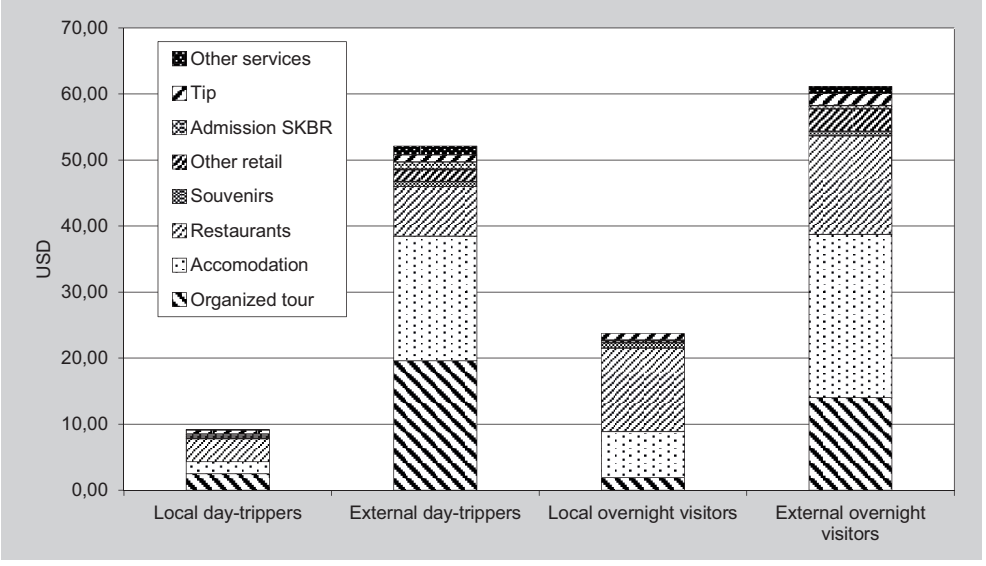
Local day-trippers spend almost as much money outside the SKBR as inside (note that only trip-related expenditures were registered, not including articles of daily use unrelated to the visit to Sian Ka'an).

The largest shares among their regional expenditures (both within and outside the SKBR) accrue for meals and beverages in restaurants (USD 3.46 per person per day), and organized tours (USD 2.51)[50].

External day-trippers to the SKBR spend more than twice as much in the adjacent region to Sian Ka'an than within biosphere reserve itself (USD 38.48 as compared to USD 14.65). In total, their regional expenditures, referring to the survey area, sum up to USD 52.13, the second-highest figure after the segment of external overnight visitors. 43.7% of all external day-trippers indicated to have paid for an accommodation within the survey region[51].

External day-trippers to Sian Ka'an spend USD 19.51 (or 37.6% of their total expenditures) on organized tours, and USD 18.87 on accommodation (36.2%) within the survey area. Regional spending in restaurants is USD 7.50 for this visitor segment—it is noteworthy that more than one third (36.3%) of external day-trippers to Sian Ka'an indicated to have booked on an all-inclusive vacation package, explaining, in part, the rather low average expenditures in restaurants. Regional expenditures in other sectors, accounting for USD 6.15 (11.8%), were less important.

Figure 6-12: Expenditure structure of local/external day-trippers/overnight visitors within the survey area (both inside and outside the SKBR)



Source: own survey

50 Note that the sample of local day-trippers also included a small number of cases in which visitors to the SKBR indicated to spend some days at a regional hotel, while their permanent residence was also located within the survey area. This explains why, on average, local day-trippers to the SKBR spent USD 1.92 per person per day on accommodation.

51 The remaining 65.3% where either staying in places outside the survey area, e.g. Cancún or Playa del Carmen, or did not spend any money on accommodation, e.g. because they stayed at friends' or relatives' places, or because they were on a day-trip from their residence outside the survey region.

The figures for **local overnight visitors** show that this visitor segment spends hardly any money outside the reserve during the stay (the difference between their expenses within the SKBR and in the survey region is just USD 1.35).

External overnight visitors account for the highest expenditures—within the SKBR alone as well as in the whole survey area. The difference between their expenditure inside (USD 55.70) and outside (USD 61.44) the SKBR is USD 5.44, of which one-third (USD 1.71) accounts for purchases in retail stores. As pointed out above, retail options are limited within the biosphere reserve, which is why some overnight visitors prefer to shop, for instance, in supermarkets in Tulúm (it is only a relatively short drive to Tulúm from the accommodation facilities in the northern part of the SKBR, which generally cater to a European and North American clientele). The same holds true for restaurants, and explains why external overnight visitors spend, on average, USD 1.18 per person in restaurants outside the SKBR.

The total regional expenditure patterns of all four visitor segments are depicted in Figure 6-12.

It should be noted that daily expenditures of around USD 50 per person could be expected to generate a substantial contribution to the regional economy (cf. Chapter 6.4). However, figures are relatively low when compared to mean tourist expenditures reported for tourist resort towns in the region. In Cancún, for instance, daily tourist expenditures (excluding airfare) summed up to USD 215.32 in 2007, according to data published by the Cancún Hotel Association (AHC[52]) (López Monzalvo and Pech Pech, 2008: 7). These differences can be explained by several reasons:

- Tourist expenditures in natural areas are generally lower than in urban environments.
- The present study includes local as well as international visitors. As pointed out above, local visitors account for significantly lower expenditures, which greatly influences mean tourist spending.
- The SKBR and its surroundings are still partly characterized by a small-scale hotel structure aiming at independent travelers and backpackers, whereas in Cancún more than 70% of hotels belong to the 5-Star or more luxurious *Gran Turismo* categories (Mora Flores and Moncada Jímenez, 2008: 5). However, privately owned accommodations can be expected to account for lower leakage rates than large-scale hotels belonging to transnational companies (cf. Chapter 3.1.2).
- For the vast majority of visitors, the SKBR represents a day-trip destination, i.e. a secondary or tertiary nucleus. 48.1% of all visitors in the sample are tourists staying in hotels outside the survey area, where, consequently, the lion's share of their expenditures accrue.
- Tourists traveling on an all-inclusive package tour scheme apparently sometimes indicated to spend no money on accommodation, suggesting that the mean expenditures reported in the present study represent a rather conservative estimate. By contrast, the figures on tourist expenditures in Cancún cited above can be expected to be somewhat more liberal, as the publisher, the hotel industry itself, would probably avoid downplaying its own importance.

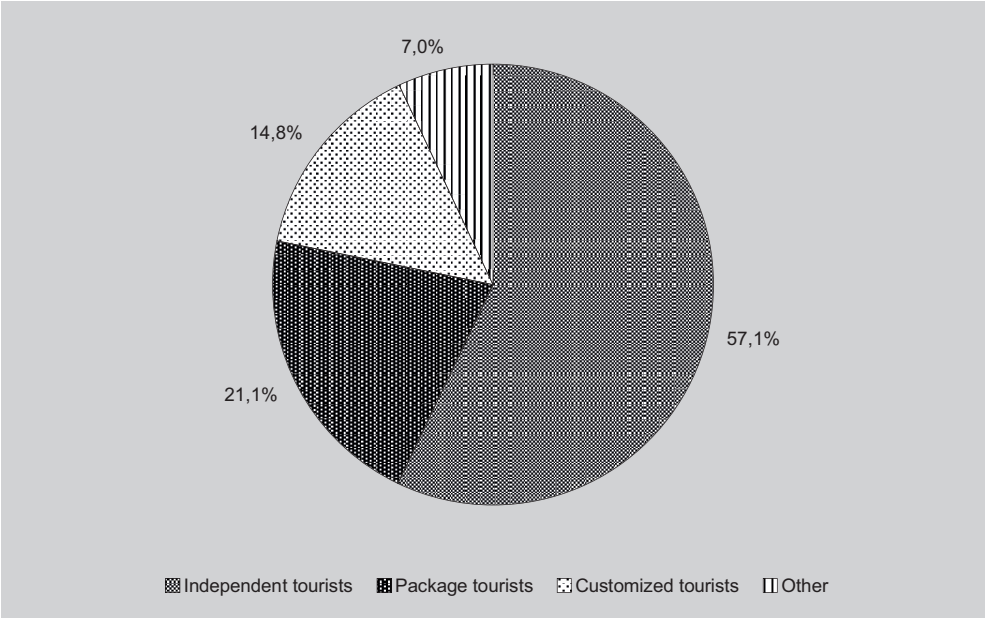
52 In Spanish: *Asociación de Hoteles de Cancún*

6.3.4 Segmentation of visitors in the SKBR according to patterns of trip organization

In the previous section, visitors to the SKBR were classified into market segments according to their origin and length of stay within the reserve, distinguishing between local and external visitors, as well as day-trippers and overnight stayers. In the following, focusing on non-local travelers, visitors are classified into tourist types according to the degree of standardization of service arrangements purchased, distinguishing independent, customized and package tourists (cf. Chapter 5.3.2).

According to this segmentation, the majority of visitors (57.1%) to the SKBR can be classified as independent tourists. Despite the region's character as a predominantly Fordist *3S* destination, only 21.1% of visitors fall into the package tourist category. Customized tourists account for the lowest share (14.8%). The remaining 7.0%, depicted as "others" in Figure 6-13, are leisure-related one-day visits from inhabitants of Quintana Roo originating in their place of residence, returning the same day. Since the classification scheme aims at international travelers (cf. Chapter 2.1.4), such local day-trippers are not considered in the following analyses.

Figure 6-13: Shares of independent, package, and customized tourists in the SKBR



Source: Own survey.

Thus, the SKBR cannot be classified exclusively as a typical alternative destination visited exclusively by adventurous, independent tourists. However, it is also markedly different from other regional tourist attractions, e.g. the staged ethno-nature theme parks of Xcaret or Xel-Ha (cf. Chapter 4.2.3).

The share of repeat visitors is highest among independent tourists: 20.0% indicated that they had previously visited the SKBR. By contrast, only 8.5% of customized tourists, and as little as 2.4% of package tourists had visited the SKBR before (Cramér's V = 0.218, $p < 0.001$). The maximum number of previous visits to SKBR among package tourists was one, while 11.7% of independent tourists and 3.3% of customized tourists indicated to have visited the SKBR at least two times before. 3.5% of independent tourists even visited Sian Ka'an for at least the eleventh time. Thus, it is fair to say that independent tourists can be characterized as the most travel-experienced of the three groups.

The share of visitors with high biosphere reserve affinity is higher among customized tourists (71.9%) and independent tourists (69.7%) than among package tourists (58.8%), but the results are not statistically significant. Customized tourists and independent tourist also account for higher nature affinity rates (93.2% and 80.1%) than package tourists (76.2%). Results are statistically significant, but the association is relatively small (Cramér's V = 0.139; $p < 0.05$).

6.3.5 Expenditures of independent, customized, and package tourists in the SKBR

In analogy to the approach in the previous section, visitor types' mean daily expenditures within the SKBR are analyzed first. As can be seen in Table 6-4, independent visitors are the least free-spending of the three groups: their total daily expenditures sum up to USD 15.58. By contrast, package tourists spend USD 21.93, and customized tourists USD 30.24. A Welch test reveals statistically significant differences between groups ($F(2,132.719) = 5.386$, $p < 0.01$), however, the results of a Games-Howell post-hoc test suggest that mean differences are only statistically significant between package tourists and independent tourists.

Table 6-4: Mean daily expenditures of independent, customized, and package tourists in the SKBR

	a) Independent tourists	b) Customized tourists	c) Package tourists	Total
N	230	60	80	3751
Expenditures (USD)	15.58c	30.24	21.93a	19.35

Letters indicate that group mean differences are significantly different at the $p < 0.05$ level. Source: own survey

Again, the expenditure structures of the three visitor types are briefly described in the following.

Independent tourists spend the least money inside the SKBR. Organized tours booked inside the SKBR account for 38.8% (or USD 5.96) of their expenditures, other important spending categories include food and beverages in restaurants (25.3% or USD 3.94) and accommodation (23.7%, USD 3.69).

The relatively low expenditures, most notably for accommodation, can be ex-

plained by the fact that 80.8% the independent visitor sample stay in hotels outside the biosphere reserve and are thus day-trippers to Sian Ka'an.

Customized tourists spend the highest amount of money (USD 30.24) in the biosphere reserve. The largest share (89.3% or USD 27.01) accounts for organized tours, other categories are almost insignificant (e.g., only USD 2.16 is spent on accommodation inside the SKBR—that said, accommodation expenses are often included in customized tour packages).

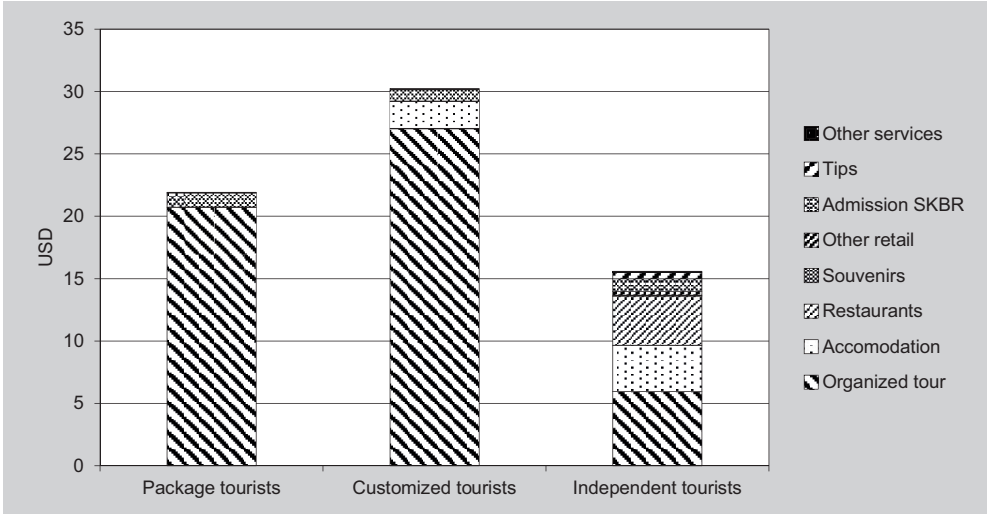
Although **package tourists** are sometimes described as contributing only marginally to regional economies, their importance should not be underestimated in the case of the SKBR. E.g., they spend more per person per day inside the biosphere reserve than independent tourists, mainly due to the contracts that market-based tour operators hold with the tourism cooperatives inside the biosphere reserve, guaranteeing the latter a fixed commission of approximately USD 21 per tourist. Taking these commissions into account, 94.5% (USD 20.71) of package tourists' spending in Sian Ka'an occurs indirectly for organized tours, benefiting the local cooperatives. Other than that, package tourists spend, on average, USD 1.17 per person for the entrance fee to the biosphere reserve (and a mere USD 0.04 on tips).

The expenditures inside the SKBR of the three tourist types are depicted in detail in Figure 6-14.

6.3.6 Expenditures of independent, customized, and package tourists in the SKBR survey area

Not surprisingly, all tourist types' expenditures are higher in the whole survey area than in the SKBR alone: package tourists spend USD 34.81, independent tourists USD

Figure 6-14: Expenditure structure of independent, customized, and package tourists within the SKBR



Source: Own survey.

49.64, and customized tourists USD 96.54. A Welch test reports a statistically significant difference between groups ($F(2,124.754) = 11.666$, $p < 0.001$). A Games-Howell post-hoc test shows that mean differences are statistically significant between all three groups at the $p < 0.05$ level (cf. Table 6-5).

Table 6-5: Mean daily expenditures of independent, customized, and package tourists in the SKBR survey area

	a) Independent tourists	b) Customized tourists	c) Package tourists	Total
N	230	60	80	3751
Expenditures (USD)	49.64	96.54	34.81	53.75

Mean values are significantly different at the $p < 0.05$ level between all groups. Source: own survey

The regional expenditure structures of independent, customized, and package tourists are briefly described in the following sections.

As described in the previous chapter, **independent tourists** are the least free-spending of the three groups if only expenditures inside the SKBR are taken into account. However, their contribution to the regional economy is significantly higher if all expenditures in the survey area are considered: independent tourists spend USD 49.64 per person per day in the survey area (of which USD 15.85 are spent inside the SKBR, cf. Chapter 6.3.5). That is, more than two-thirds of their total regional expenditures related to the visit to Sian Ka'an accrue outside the biosphere reserve itself.

The largest share of independent tourists' regional expenditures is spent on accommodation (USD 20.86), followed by food and beverages in restaurants (USD 12.22). In addition, independent tourists spend, on average, USD 8.81 on organized tours in the survey area[53]. The other categories are of less importance.

Again, **customized tourists** are the most generous of the three tourist types, with mean regional expenditures of USD 96.54 per person per day. Almost half of their average daily budget, USD 47.47, is spent on organized tours booked within the survey area. Regional accommodation expenditures account sum up to USD 36.83. Unlike package tourists, customized tourists travel independently and book organized tours on-site according to their individual preferences and needs. They tend to prefer spending their vacation in destinations like Tulúm, with a somewhat alternative ambiance and a small-scale accommodation structure compared to mass tourist destinations and large-scale hotels found in Cancún and the Riviera Maya. Hence, their contribution to the regional economy is significant, as most of the spending related to the visit to Sian Ka'an occurs in the immediate vicinity.

Other spending categories are of much less importance. For instance, customized tourists spend less money in restaurants than independent tourists (USD 6.19). One

53 Note that the criterion to be classified as an independent tourist is to travel independently to the SKBR. However, independent tourists may spontaneously choose to book an organized tour within the reserve with a local tour operator, or a guided visit to the Muyil ruins just outside Sian Ka'an, which explains the expenditures in this category.

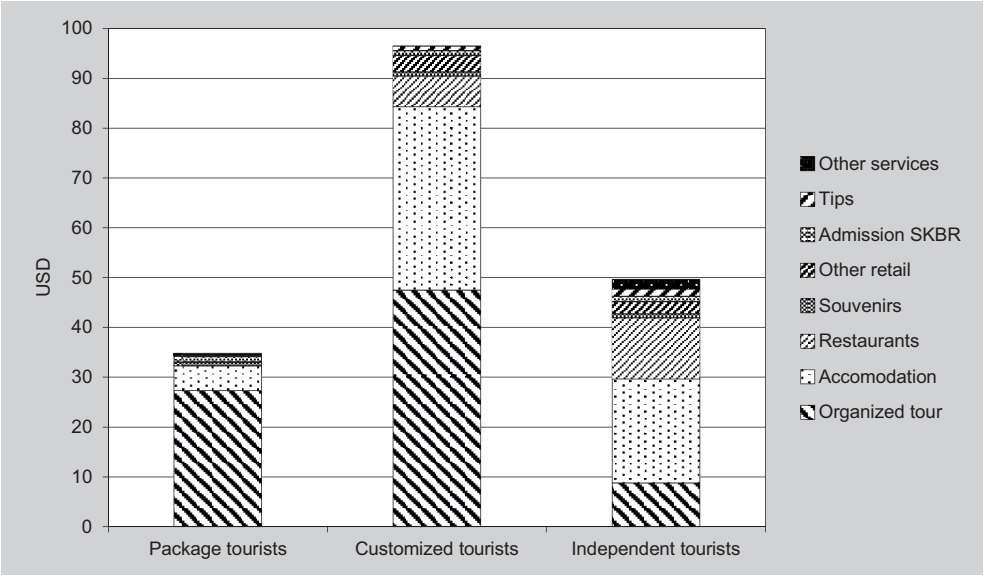
reason for this is that organized tours booked at regional operators tend to include lunch and beverages, which probably reduces customized tourists' inclination for additional spending in restaurants.

Package tourists' mean regional expenditures, USD 34.81 per person per day, are smaller than those of the two other tourist types. Organized tours to the SKBR account for 78.5% of all the money package tourists spend in the survey region. The majority of visitors in this group (80.2%) stay in the Riviera Maya-Cancún corridor (i.e. outside the survey area), where the hotel structure is dominated by large-scale resorts. Thus, money that package tourists spend at their hotel or their main destination does not contribute to the regional economy around Sian Ka'an.

Other than expenditures for organized tours, package tourists' spending in the survey area is marginal: USD 4.96 accounts for accommodation (again, most hotels in the survey area, notably in Tulúm, are catering to independent travelers and do not offer all-inclusive packages), and USD 1.17 for the SKBR admission. Expenses in all other categories are less than USD 1.00 per person.

Figure 6-15 shows the detailed structure of all three tourist types' expenditures in the survey area.

Figure 6-15: Structure of the expenditures independent, customized and package tourists in the SKBR survey area



Source: own survey

One decade ago, the SKBR could be described as a relatively little-visited, alternative fraction of Quintana Roo's touristic landscape. Torres (2002: 111), for instance, observed a reluctance among international tourists in Cancún to visit protected areas such as Sian Ka'an, due to a "lack of development of an ecotourism industry; poor infrastructure in remote areas; and the type of tourism the region

attracts." The data presented in the previous section suggests that this situation has changed over the past ten years. Although independently traveling visitors still represent the majority in Sian Ka'an, package and customized tourists, characterized by a higher degree of standardization in terms of travel arrangements, account for a substantial part of the total number of visitors. The figures presented in this chapter also suggest that package tourists' contribution to the regional economy should not be underestimated, mostly thanks to commissions paid by package tour operators to local cooperatives. However, the lion's share of package tourists' expenditures accrues to tour operators and hotels based outside the survey area, generating substantial regional leakages. By contrast, independent, and most notably customized tourists account for higher regional expenditures, and a more balanced expenditure structure, as they tend to stay in small-scale hotels and lodges, farther away from the mass tourist bubbles of Cancún and the Riviera Maya, and closer to the SKBR.

6.3.7 Biosphere reserve affinity, nature affinity and spending behavior in the SKBR

Common descriptions characterize ecotourists as more affluent, better educated, and more demanding post-Fordist consumers, in contrast to Fordist mass tourists (cf. Chapter 3.1). In the context of the present study, one question arousing from these assumptions is whether the importance visitors attach to nature-based attractions and nature conservation influences their regional spending behavior. This issue is addressed in the following sections. Note that regional expenditures refer to tourists' spending in the survey area; expenditures inside the SKBR are not calculated separately.

As an overall result, visitors with high biosphere reserve affinity spend, on average, more money per person per day in the survey region than other tourists in the SKBR: USD 53.27 as compared to USD 43.30. However, these differences are not statistically significant (Welch test: $F(1,247.481) = 2.376$, $p > 0.05$). An overview of mean expenditures distinguished between visitors with high and low biosphere reserve affinity is shown in Table 6-6.

Table 6-6: Biosphere reserve affinity and expenditures in the SKBR survey area

	High Biosphere reserve affinity	Low Biosphere reserve affinity	Total
N	276	125	401
Expenditures (USD)	53.27	43.30	50.16

Mean differences are not statistically significant. Source: own survey

The influence of the more general nature-orientation of trip motivations on spending behavior is examined in a similar way in the following section.

As described in Chapter 5.2.5, visitors in the sample were also classified with regard to their general trip motivation, distinguishing visitors with nature-related

trip motivations (but, however, not necessarily by the existence of a protected area, as in the case of visitors with high biosphere reserve affinity) from those who were mainly attracted by non nature-related reasons.

Overall, visitors with high nature affinity spend significantly more money per person per day in the survey region (Welch test: $F(1, 182.444) = 6.414$, $p < 0.05$): USD 53.55 vs. USD 38.36 (cf. Table 6-7).

Table 6-7: Nature affinity and expenditures in the SKBR survey area

	High nature affinity	Low nature affinity	Total
N	322	81	403
Expenditures (USD)	53.55	38.36	50.48

Mean differences are statistically significant with $p < 0.05$ according to the results of a Welch test. Source: own survey

6.4 Economic impacts of tourism in the SKBR

6.4.1 Tourist gross turnover

Visitors to the SKBR generate, through their expenditures, a total regional gross turnover of around USD 4.5 million per year. As depicted in Figure 6-16, a larger share of the regional gross turnover is generated in communities adjacent to the SKBR (i.e. inside the survey area, but outside the biosphere reserve's boundaries). In order to account for the SKBR's unique economic impact (Mayer et al., 2010: 75), gross turnover generated by visitors with high biosphere reserve affinity is distinguished, which accounts for 72.1%, or USD 3.3 million, of the total turnover.

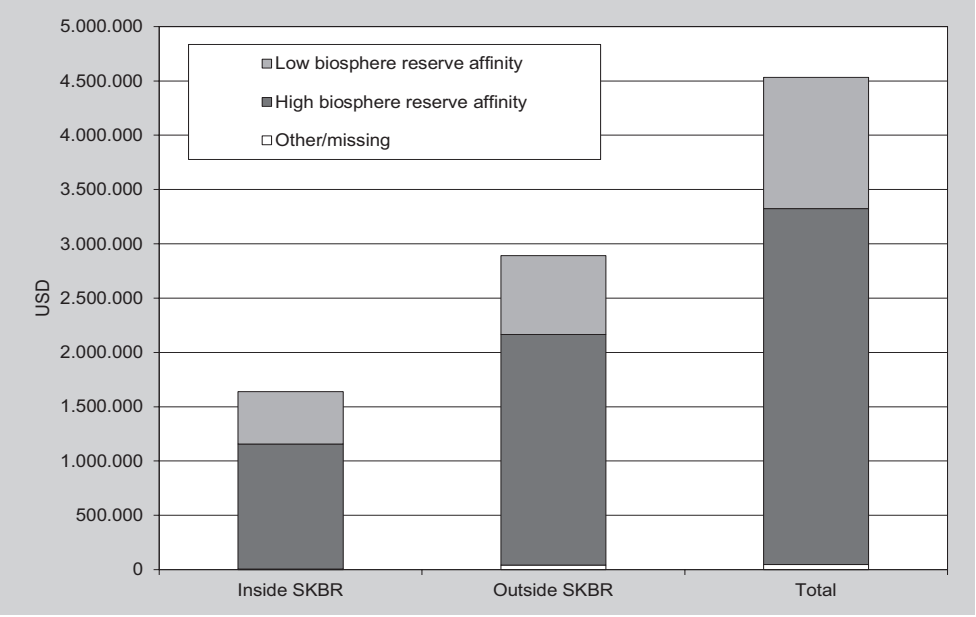
In the following chapter, regional income effects are calculated.

6.4.2 Regional economic impacts

The calculation of economic impacts is based on the latest available OECD domestic input-output table for Mexico (Organization for Economic Co-operation and Development, 2011). A matrix of regional multipliers (cf. Appendix 2) for the survey area was constructed following the approach described by Flegg et al. (1995), as described in Chapter 5.1.3.2. Regional economic data from INEGI's 2004 economic census[54] was used to derive intraregional trade coefficients, and a regional Leontief inverse matrix was calculated as to determine *type I* income multiplier and economic impacts generated by tourist spending in different sectors, e.g. hotels and restaurants or retail trade (cf. Appendix 2). As in Flegg et al. (1995: 553), households were

54 Results of the 2004 edition of INEGI's economic census were given priority over the more recent 2009 census, as the former correspond to the period of OECD's national input-output table (mid-2000s). Note that until March 2008, today's municipality of Tulúm was a part of the larger municipality of Solidaridad. The latter was thus considered for deriving the regional input-output table.

Figure 6-16: Regional gross turnover (USD) generated by tourism in the SKBR



Source: own survey

Table 6-8: Regional economic impacts of tourism in the SKBR

	High biosphere reserve affinity	Low biosphere reserve affinity	All visitors
Daily expenditures (USD)	53.27 *53.69*	43.30 *44.22*	50.48 *53.05*
Visitor days	61,510 *56,529*	27,890 *27,106*	89,764 *83,903*
Gross turnover ('000 USD)	3,276.6 *3,204.8*	1,207.6 *1,198.7*	4,531.4 *4,450.6*
Income multiplier	0.225 *0.229*	0.228 *0.233*	0.226 *0.225*
Total income effects ('000 USD)	736.7 *718.6*	275.7 *273.5*	1,023.3 *1,003,0*
Employment equivalent (persons)	220 *215*	82 *82*	306 *300*
Share of total number of employed persons in the survey area (%)*	0.435 *0.424*	0.163 *0.161*	0.604 *0.592*
Income equivalent (persons)	970 *946*	363 *360*	1,348 *1,321*
Share of survey area's population (%)	0.279 *0.272*	0.104 *0.104*	0.387 *0.380*

Values in bold print represent all visitors; values in italic refer to non-local visitors only. Source: own survey; secondary data obtained from OECD (2011), INEGI (2004; 2006b; 2009b), The World Bank (2012).
*The most recent Economic Census of 2009 does not include the municipality of Tulúm, which was designated in March 2008. Thus, the number of employed persons for this municipality was simulated based on the proportion of the total population of Tulúm as compared to the former municipality of Solidaridad, the latter of which included the territory of the former prior to 2008.

treated as exogenous. It should be noted that, due to the reasons described in Chapter 5.3.3, that all of the following results represent approximations rather than exact values.

As depicted in Table 6-8, the total income effects of tourism in the SKBR sum up to around USD 1.0 million. According to the regional economic data, a total number of 306 regional jobs across all economic sectors can be related to tourism in the biosphere reserve, which corresponds to 0.6% of the total regional work force. The total income equivalent is 1,348 persons, representing 0.4% of the population in the survey area.

If only visitors with high biosphere reserve affinity were taken into account, income effects from tourism in the SKBR would amount to USD 736,700. This would generate an employment equivalent of 220 persons, 0.4 of the survey area's total number of employed persons, or an income equivalent of 970 persons, representing 0.3% of the regional population.

As pointed out in Chapter 5.3.3, some authors argue that local visitors should not be taken into account into economic impact analyses. Thus, income effects were also calculated considering only external visitors, as represented in italic in Table 6-8. In the case of the SKBR, the economic importance of locals' expenditures is marginal, as visitors from outside the survey area account for 98.0% of the total regional income effects. To sum up the results, the total regional income effects of tourism in the SKBR can be expected to range from USD 718,600 (most conservative estimation, taking into account only non-local visitors with high biosphere reserve affinity) and USD 1,023,300 (most liberal estimation, including local as well as external visitors with both high and low biosphere reserve affinity).

6.5 Intermediate discussion: visitation, expenditures and regional economic impacts in the SKBR

Through their mean daily expenditures of USD 50.48 per person in the survey region, visitors to the SKBR contribute substantially to the regional economy of the adjacent *municipios*. However, as in most cases, per-capita expenditures in protected areas are lower than in resort towns such as Cancún.

Apart from the expected findings (i.e. that local visitors spend considerably less money than international tourists and tourists from other parts of Mexico) the results presented in the previous chapter suggest that the tourism structure in the SKBR (which is visited by independent, package, and customized tourists) is rather complex.

According to the study results, it would be an oversimplification to assume all visitors in the biosphere reserve are environmentally conscious, travel-experienced ecotourists who spend a lot of money on high-class services. For instance, in most of the surveyed visitor groups, tourists with high biosphere affinity did not spend statistically significant more than tourists with low affinity rates (however, if not sta-

tistically significant, the former's mean averages tended to be higher). In the group of customized tourists, visitors with low biosphere reserve affinity, on average, accounted for even higher per capita expenditures than their counterparts with high affinity rates (although, again, mean expenditures did not differ in a statistically significant manner).

By contrast, visitors that were attracted mainly by natural features, but not necessarily by the existence of a protected area, spend significantly more money than those mainly interested in non nature-related issues. Fly-fishermen, for instance, account for some of the highest per capita expenditures in the SKBR, with packages costing approx. USD 2,200 USD per person per week (not including flights), and are clearly attracted by one of Sian Ka'an's unique natural features, i.e. the abundance and variety of marine species. However, fly-fishers tended to indicate that the fact that Sian Ka'an was a biosphere reserve was only of minor importance (if at all) to them.

Overall, the SKBR represents a significant factor in the regional economy. Regional income effects generated through tourist expenditures by visitors to the biosphere reserve can support over 1,000 people to make a living. Still, there seems to be room for optimization with regard to economic leverage: regional decision-takers could focus more explicitly on lucrative visitors, e.g. special interest customized tourists. It is also advisable to support intraregional linkages between different economic sectors, so as to gain higher regional multipliers, as well as to increase the offer of regional products such as handicrafts to tourists. For instance, the small expenditures of external day-trippers/package tourists on souvenirs, especially within the local communities inside the biosphere reserve, suggest there is room for improvement.

Finally, relying on the study results on economic impacts of the SKBR—as well as the identified potential for their future increase—should support regional stakeholders making a case for nature conservation and the sustainable use of resources.

7 Results: Souss-Massa National Park

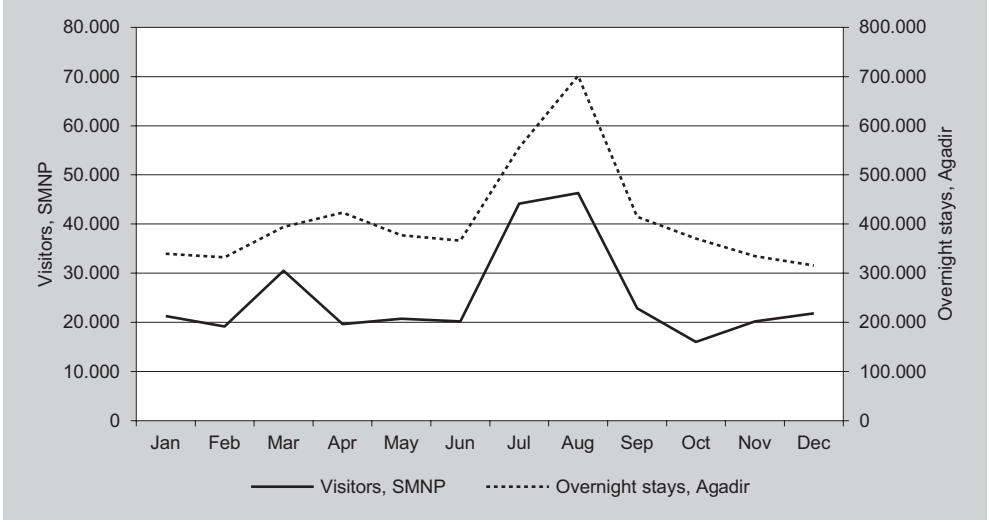
7.1 General data on visitation in the SMNP

7.1.1 Number of visitors and seasonal distribution

In contrast to the SKBR, no visitation data was available for the SMNP prior to the present study. Thus, no information exists on the evolution of visitor numbers too. Due to this lack of secondary data, the visitor survey in the SMNP had to be more extensive than in the SKBR (cf. Chapter 5.2.2).

Based on the results of the visitor counts and the extrapolation method described in Chapter 5.2.3, a total number of 303,026 visitors was determined for the season of 2007–08. As Figure 7-1 indicates, the seasonality patterns of visitation to the SMNP are, on a much lower level, comparable to the number of overnight stays in classified hotels in Agadir, suggesting that the survey results can be considered acceptable. The similarity also emphasizes Agadir's importance as starting point for day trips to secondary nuclei such as the SMNP.

Figure 7-1: Visitation of the SMNP during the season and comparison with the number of overnight stays in classified hotels in Agadir



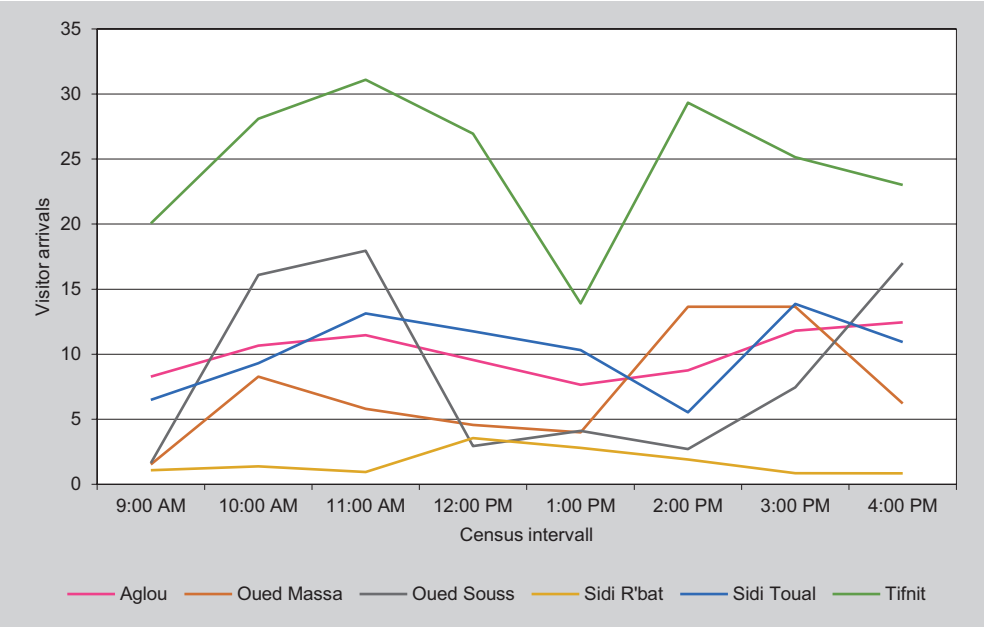
Both data sets refer to the survey period between May 2007 and April 2008, but are depicted to represent a period of one calendar year. Sources: own survey and DRT (2008).

The highest visitation for the SMNP is registered during the Easter season (vacations in European source markets) and in summer. Ramadan accounts for the lowest visitation (in 2007, Ramadan was during the months of September/October which are also considered low season for European visitors).

Visitation not only differs between seasons, but also between census points and

the time of day (cf. Figure 7-2). The beach at Tifnit accounts for the highest average visitor numbers, especially during weekends and holidays, when the site is highly frequented by local families. Figure 7-2 shows average arrival numbers, which can be much higher during the high season. For example, on July 21, 2007, over 1,000 visitors were counted at the site.

Figure 7-2: Average number of visitor arrivals at the census points in the SMNP during the census core time (9:00 am—5 pm)



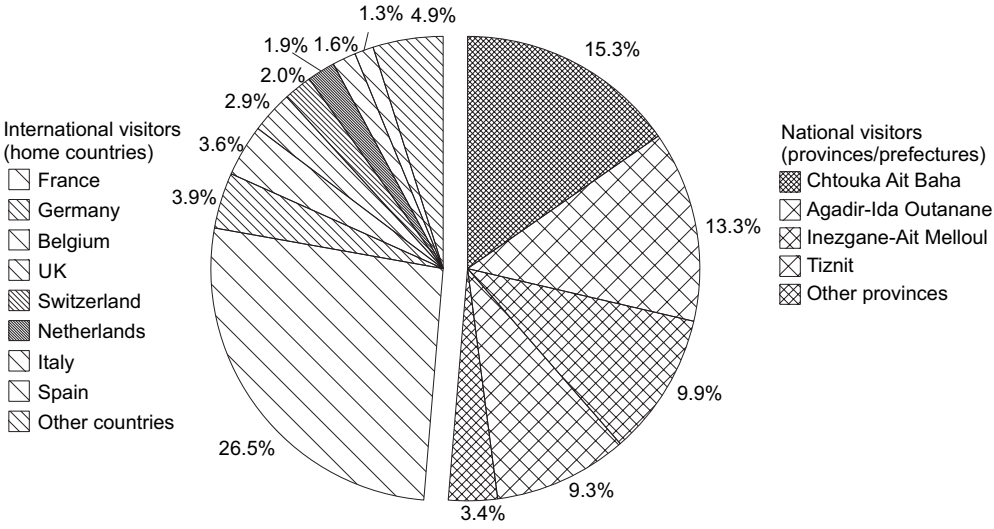
Source: own survey

Other sites are less visited. At Oued Souss, the standard schedules of organized camel or horseriding tours are clearly visible, which are usually offered in the morning and in the afternoon. At Oued Massa, a small peak can be observed during the afternoon, when tour groups in the SMNP pass through the site.

7.1.2 Origin of visitors

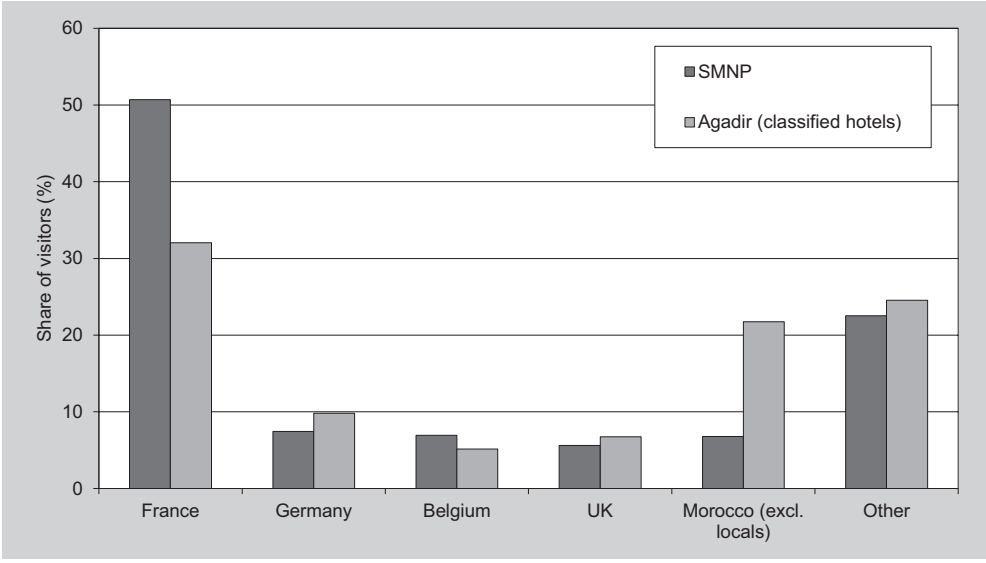
Slightly more than half of all visitors are nationals, among which local visitors predominate: in total, 93.4% of all Moroccan visitors indicated that their residence is in one of the four provinces defined as the survey region. European tourists represent 46.9% of all visitors, making them by far the most important group of foreign visitors (non-European international tourists account for a mere 1.7% of all visitors to the SMNP).

Figure 7-3: Origin of visitors in the SMNP



Source: own survey

Figure 7-4: Origin of nonlocal tourists in the SMNP and classified hotels in Agadir



Sources: DRT (2008), own survey

Among the international visitors, tourists from France represent the most important group (26.5% of all visitors). This predominance can be explained, in part, by the importance of the French market for tourism in Morocco; in 2010, visitors from France accounted for 41.7% of all overnight stays in Moroccan classified hotels (MTA, 2013). In the context of this study visitors to the SMNP were asked about their permanent residence, not their nationality. Moroccan immigrants living in France are thus counted as French visitors. In economic terms, the residence, (or to be more precise, the place where a person receives his or her salary) is more important than nationality, as nationals living abroad also generate financial inflows into the region.

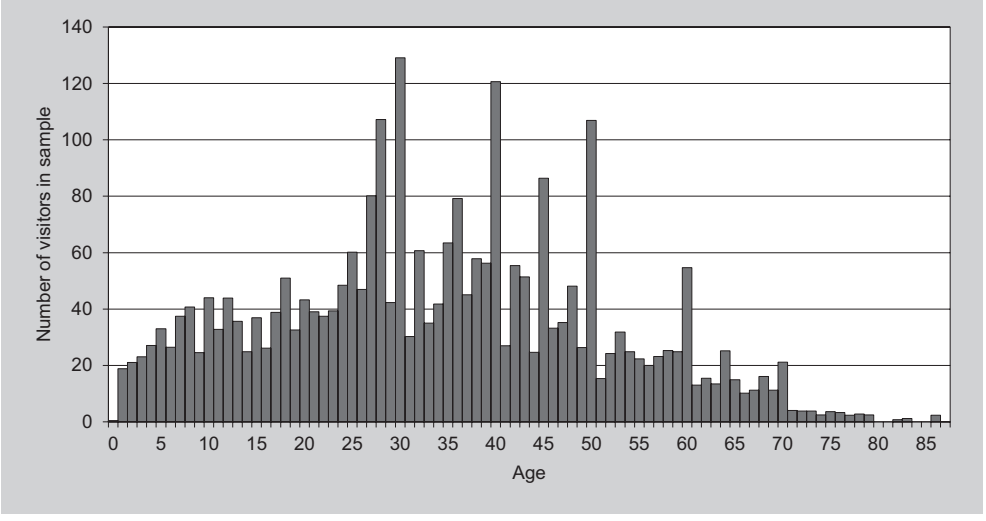
Compared to tourists in Agadir, the SMNP accounts for some notable differences with regard to the visitor structure. For the sake of comparison, local visitors are excluded in this analysis. As illustrated in Figure 7-4, visitors from France are overrepresented in the SMNP.

Moroccans from outside the survey region, on the other hand, account for only 6.8%. While the national park represents an important recreation area for the local population (cf. Figure 7-3), domestic tourists staying at hotels in Agadir seem to attach less importance to visits to this protected area.

7.1.3 Sociodemographic visitor data and average length of stay in the SMNP

As in the SKBR, most visitors in the SMNP are relatively young: 75.2% of the visitor sample is aged 45 or younger, and more than half of the visitors are under 35 years

Figure 7-5: Age distribution histogram of visitors to the SMNP



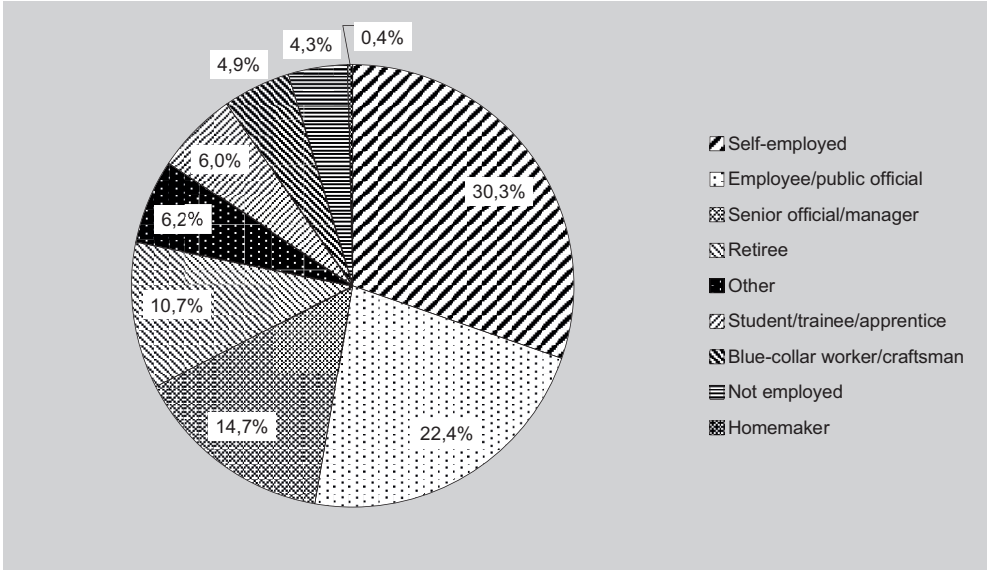
N = 2,829; Mean = 33.9; Median = 33; Std. Dev. = 27.2*; Source: own survey

* Note that the sample size for age data differs from the general study sample size (N = 1,401), as age data was logged for all group members, not only for interview partners.

old. One explanation for this is SMNP's popularity as destination for weekend excursions among local families. Thus, the visitor sample reflects, in part, the social structure of the survey region with a relatively youthful population. The mean age of the SMNP sample population is 33.9 years, with a median of 33 years and ranging from 1 to 87. Supporting the statement above, the mean age of Moroccan visitors (30.2 years) is considerably lower than that of international tourists (38.1 years). The average age and median are thus (almost) equal to the visitor sample in the SKBR.

Self-employed persons represent the largest professional group in the SMNP visitor sample (30.3%), followed by employees and public officials (22.4%) and managers/senior officials (14.7%; cf. Figure 7-6). The relatively large share of retirees is somewhat surprising, given the mean age of the visitor sample of just 33.9 years (see above). In part, this can be explained by the survey design, by which the age of all members of a group was logged (i.e. a family traveling together), while the question regarding the visitors' profession was just aimed at the specific interview partner, usually an adult person. However, the share of retirees also reflects Agadir's popularity as a destination for retired Europeans (quite a few European retirees have secondary homes in Agadir, or moved there completely or temporarily during the winter months). The low number of homemakers in the sample is also remarkable. It can be explained in part by the traditional gender roles among the local population, whereby it was almost always a male person who acted as interview partner in the study. The share of male interview partners was 94.2% among the Moroccan study population, as compared to 77.0% among study participants from other countries (Cramér's V = 0.248; $p < 0.001$). It is also assumed that the mostly male interviewers—Moroccan students from the University of Agadir—tended to approach male persons as interview partners.

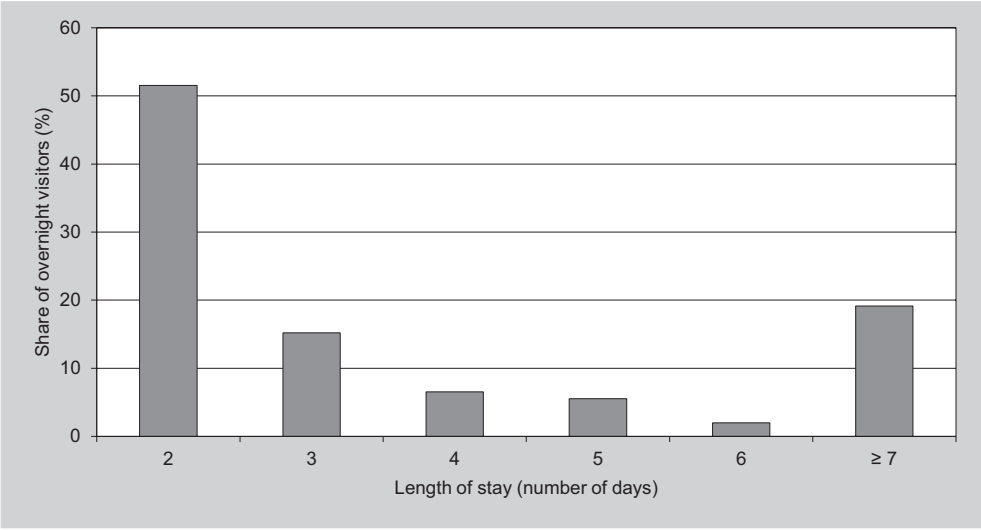
Figure 7-6: Occupation groups in the visitor sample in the SMNP



Source: own survey

Nine out of ten visitors in the SMNP are day-trippers; only 9.0% spend at least one night in the national park, a proportion comparable to the SKBR.

Figure 7-7: Frequency distribution of overnight visitors' length of stay in the SMNP



Source: own survey

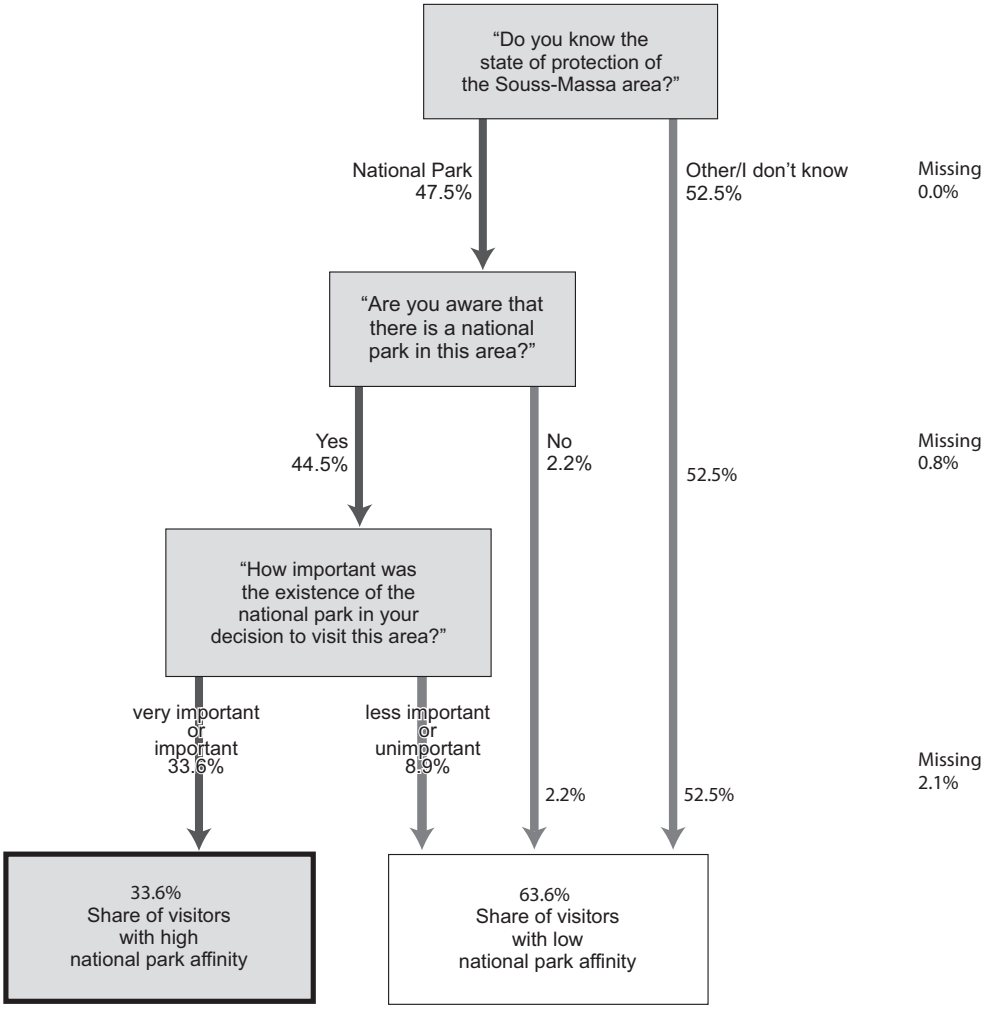
Overnight visitors stay an average of 6.6 days in the SMNP—a remarkable result. The median, however, is only 2 days (Std. dev. = 10.9), which indicates that the relatively high average length of stay is biased due to some outliers, usually referring to Moroccans living abroad and spending their summer vacation with their family in one of the villages within the SMNP (cf. Figure 7-7).

7.2 National park affinity and travel motivations of visitors in the SMNP

7.2.1 National park affinity

As in the SKBR case study, visitors to the SMNP were distinguished according to their affinity to the protected area. Figure 7-8 shows that the share of visitors with high national park affinity is only 33.6%, significantly lower than in the SKBR. Mainly responsible for this result is the low awareness of the national park among visitors: less than half of the visitor sample actually knew they were inside a protected area. On the other hand, for the majority (75.5%) of those visitors who did know about its existence, the SMNP played a crucial role for their decision to visit the area.

Figure 7-8: Decision tree and share of visitors with high and low national park affinity in the SMNP



Source: own survey

As stated in Chapter 4.3.4, the free-access policy in Moroccan national parks is undoubtful one of the main reasons for the low level of familiarity: Visitors are allowed to enter the park freely, and signposts explaining SMNP's name and function are scarce and, in some places, easily overlooked. For example, at the southern entrance close to the village of Aglou, there was only one small sign in Arabic in 2008.

Interestingly, shares of visitors with high national park affinity differ statistically significant between census points in the SMNP, although the association is small (Cramér's V = 0.183, $p < 0.001$). Affinity rates were highest at the Oued Massa census points (52.2%), most likely related to two information boards set up with the aid of an international NGO. On the other hand, the lowest affinity rates were reported

at Oued Souss (25.0%). At this venue, most visitors arrive taking part in camel ride tours offered all around the beach, hotel zone and downtown Agadir. Guides at these tours tend to give no specific information on the national park or even no information at all.

These findings should not suggest that setting up more information boards would automatically increase the share of environmentally conscious tourists. However, it would most likely raise awareness for the SMNP's functions and its importance among visitors, and might, in the medium term, increase its general name recognition.

7.2.2 Nature-affinity

As in the SKBR, visitors to the SMNP were also asked an open-ended question to indicate the two most important reasons for visiting Souss-Massa. Answers were categorized and evaluated according to the scheme described in Chapter 5.2.5.

As in the case of Sian Ka'an, answers categorized as "other" were the most numerous (43.3% of all given answers), but were mostly meaningless (e.g. "curiosity," "do tourism") or irrelevant in the context of the present study (e.g. "good weather," "visit friends")[55]. Again, as in Sian Ka'an, answers belonging to the category "nature/landscape" were the second most named reasons, with 27.3% of all given answers. 13.3% of all answers referred to nature-related activities, most notably walking or camel and horse riding, which is offered as standardized two-hour long excursion at the Oued Souss estuary (cf. Chapter 4.3.5.3). 10.1% of visitors stressed Souss-

Table 7-1: Most important reasons to visit Souss-Massa: frequency and share of total answers

Categorized motivations	N	%
Nature/landscape	288	27.3
Conservation/ecotourism	15	1.4
Nature-related activity	141	13.3
Non nature-related activity	22	2.1
Uniqueness	107	10.1
Culture	26	2.4
Other	458	43.3
Total answers	1,057	100.0

Source: own survey

55 Again, as in the case of the SKBR, percentages given here refer to the total number of given answers (N = 1,057), not the number of visitors in the sample (N = 1,041). Visitors could give multiple answers, and some chose not to answer at all.

Massa's "uniqueness," e.g. by comparing it to "conventional" mass tourist resorts like Agadir. 2.4% of answers are related to cultural interests (e.g. "berber culture"), and 2.1% to non nature-related activities. The latter comprised mostly activities that can be characterized as being independent from natural venues (e.g. locals visiting the SMNP to "play soccer on the beach"), but not necessarily in contradiction to nature protection, although some (few) visitors also indicated to take part in cross-country quad tours which are officially prohibited by the park management. Finally, only 1.4% of all answers explicitly referred to Souss-Massa's status as a protected area or venue for tourism in concordance with principles of sustainability.

In total, 73.9% of all visitors named at least one nature-related motivation as one of their two most important reasons to visit the area. Thus, the share of nature-related motivations is more than twice as high as the share of visitors with high national park affinity. As in the case of the SKBR, there is no statistically significant association between visitors' national park affinity and the nature-orientation of their general trip motivations. Reasons for this might be similar to the explanations given in Chapter 6.2.2 for the SKBR; however, in the case of the SMNP, the low general awareness of the park is most likely the main driver behind the observed discrepancy. In other words, many tourists might generally be interested in visiting natural areas without knowing about (or attaching importance to) its exact protection status.

7.3 Visitor segmentation and daily expenditures in the SMNP

7.3.1 Segmentation of visitors to the SMNP according to origin and length of stay

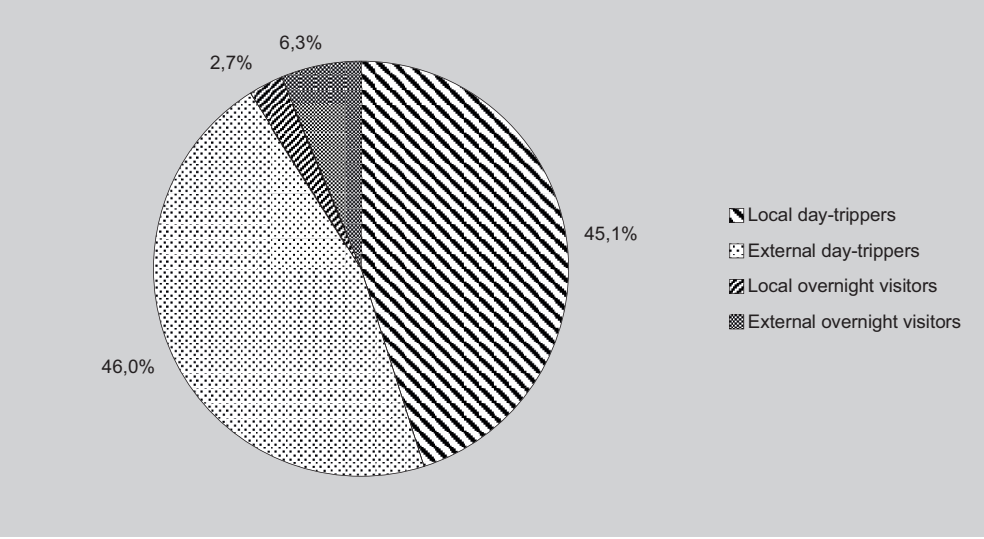
As in the SKBR, visitors to the SMNP were also first segmented according to the following two criteria (segmentation approach 1a, cf. Chapter 5.3.2):

- place of residence, differentiating between locals (place of residence within the survey region), and external visitors (both Moroccan and international visitors living outside the survey area).
- length of stay inside the SMNP, distinguishing between day-trippers and overnight visitors, the latter of which stay for at least one night inside the national park.

Thus, visitors are classified as local day-trippers, external day-trippers, local overnight visitors, or external overnight visitors. It is noteworthy that, in contrast to the case study in the SKBR, all external day-trippers spent at least one night in the survey area (but outside the SMNP). That is, there were no cases of national visitors to the SMNP who arrived from their hometown outside the survey area and returned the same day. The survey area's peripheral location in Morocco and the fact that the major regional agglomeration, Agadir, was included in the survey area due to its proximity to the SMNP are most likely the main reasons for this finding.

The shares of the four visitor segments are depicted in Figure 7-9.

Figure 7-9: Shares local/external day-trippers/overnight visitors in the SMNP (N = 1,041)



Source: own survey

With reference to the total number of 303,026 visitor days, 136,653 local day-trippers, 139,275 external day-trippers, 8,158 local overnight visitors and 18,939 external overnight visitors visit the SMNP annually. Of the 139,275 external day-trippers, 89,161 (or 32.4% of all visitors to the SMNP) are international external day-trippers who stay at at a hotel in Agadir. Thus, the SMNP captures 17.4% of all tourists in Agadir (567,931 international arrivals in 2008; cf. DRT, 2008)—a significant market penetration. Local overnight visitors stay an average of 11.4 days inside the SMNP. The average length of stay for external overnight visitors, 4.8 days, is considerably shorter. External overnight visitors are more likely to have a high national park affinity than all other visitor groups, but the association is small (Cramér's V = 0.135, $p < 0.001$). The more general nature affinity, by contrast, is highest (82.8%) among local overnight tourists and lowest (68.0%) among local day-trippers, whose travel motivations tend to be more related to relaxation and spending time with the family (Cramér's V = 0.123, $p < 0.001$).

7.3.2 Expenditures of local/external day-trippers/overnight visitors in the SMNP

The mean daily expenditures of all visitors in the sample within the SMNP sum up to only USD 5.31[56]. As in the case of the SKBR, there are significant differences in the

56 The exchange rate of January 1, 2008, has been assumed for amounts given in MAD or EUR (MAD 1.0 = USD 0.12786; Source: http://www.oanda.com).

mean expenditures of the four visitor groups (Welch test: $F(3, 93.931) = 17.612$; $p < 0.001$). Local day-trippers spend the least with USD 1.52 per person per day. However, external day-trippers also account for very low mean expenditures inside the SMNP: On average, this visitor segment spends USD 5.27 inside the SMNP. Local overnight visitors spend only slightly more (USD 5.52), while external overnight visitors take a clear lead with USD 32.88 per person per day. A Games-Howell test suggests that mean differences are statistically significant between the groups as depicted in Table 7-2.

Table 7-2: Mean daily expenditures of local/external day-trippers/overnight visitors within the SMNP

	a) Local day-trippers	b) External day-trippers	c) Local overnight visitors	d) External overnight visitors	Total
N	469	478	28	65	1,041
Expenditures (USD)	$1.52^{b,d}$	$5.27^{a,d}$	5.78^{d}	$32.88^{a,b,c}$	5.31

Letters indicate that group means are significantly different at $p < 0.05$ according to the Games-Howell test. Source: own survey

The structure of the different visitor segments' expenditures inside the SMNP is described in more details in the following sections and depicted in Figure 7-10.

As stated above, **local day-trippers**' expenditures inside the SMNP are almost insignificant. They spend, on average, USD 0.85 per person on food in snack bars and restaurants, USD 0.59 on transportation, and even smaller amounts in other categories. 68.2% of local day-trippers indicated not to spend any money at all while in the SMNP.

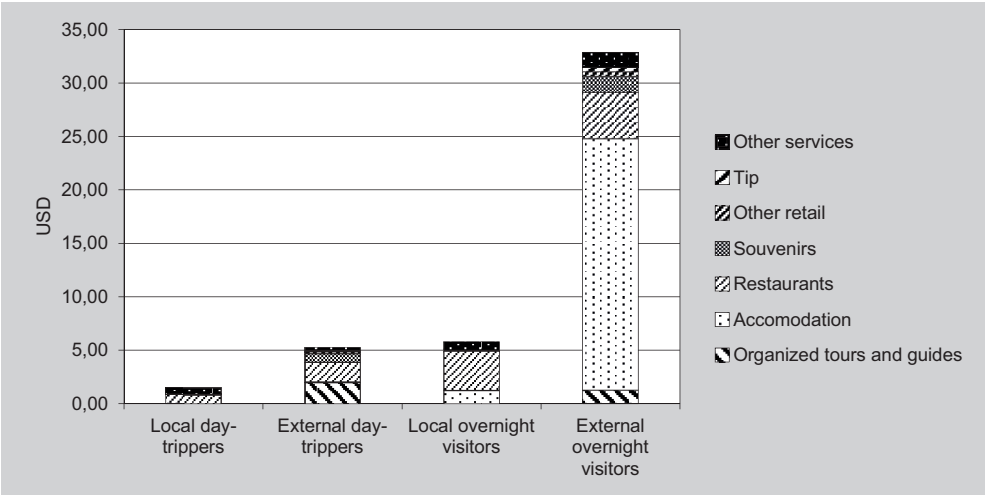
External day-trippers' expenditures are also very limited inside the SMNP. On average, USD 2.00 are spent on organized tours and guides, e.g. birdwatching guides at the Oued Massa estuary or short donkey rides offered at the same venue. Other than that, external day-trippers spend USD 1.84 per person in restaurants inside the park—and only decimal amounts in other categories. Interestingly, the share of visitors not spending any money at all in the park was the highest in this category (69.1%).

Local overnight visitors spend only slightly more than either segment of day-trippers. For instance, their average expenditures for accommodation are only USD 1.26—less than what they spend in snack bars or restaurants (USD 3.56). Most local overnight visitors stay with friends or relatives, in their own secondary homes or in informal accomodations, e.g. in fishermen's caves in the cliffs that are often equipped with beds and basic furniture. Consequently, 83.9% of local overnight visitors did not spend any money on accommodation and only 3.1% indicated to stay in a hotel inside the SMNP. Less than one dollar is spent in each of the other categories.

External overnight visitors represent the only visitor segment that accounts for substantial expenditures inside the park. They spend 71.5% (USD 23.49) of their daily budget on accommodation. In addition, USD 4.32 are spent in restaurants, USD 1.54 on souvenirs, and USD 1.28 for guides and organized tours.

The share of hotel guests, 48.3%, is higher in this segment than in the previous one. As stated in Chapter 4.3.5, the number of hotels in the SMNP is very limited and the existing ones cater mainly to an affluent clientele. Still, however, more than 50% of external overnight visitors stay in cheaper or free types of accommodation, which explains the relatively low overall mean expenditures. This segment also includes Moroccans who emigrated from the region but still maintain relatively close relations to their families, thus the high proportion of external overnight visitors who paid nothing for their accommodation in the SMNP (61.2%).

Figure 7-10: Expenditure structure of local/external day-trippers/overnight visitors inside the SMNP



Source: own survey

All in all, visitor spending in the SMNP is very low, which is, in part, most likely a consequence of a lack in quantity and quality of tourist facilities targeting national park visitors (cf. Chapter 4.3.5).

7.3.3 Expenditures of local/external day-trippers/overnight visitors in the SMNP survey area

Visitors' expenditures within the actual national park are low, or, in some cases, even almost insignificant. However, spending in the surrounding area is considerably higher, at least for some of the visitor segments, as will be discussed in the following. Reasons for this are comparable to the ones mentioned in Chapter 6.3.3 with reference to the SKBR.

Visitors of the SMNP spend an average of USD 35.39 per person per day in the survey region—six times the mean amount spent inside the national park alone.

Again, statistically significant differences exist between the segments (Welch test: $F(3,105.461) = 69.203$; $p < 0.001$). However, while reported mean differences are large between locals and external visitors, they are marginal between day-trippers and overnight stayers when local and external visitors are analyzed separately (cf. Table 7-3 and Figure 7-11).

Table 7-3: Mean daily expenditures local/external day-trippers/overnight visitors in the SMNP survey area

	a) Local day-trippers	b) External day-trippers	c) Local overnight visitors	d) External overnight visitors	Total
N	469	478	28	65	1,041
Expenditures (USD)	$8.29^{b,d}$	$60.96^{a,c}$	$9.14^{b,d}$	$54.28^{a,c}$	35.39

Letters indicate that group means are significantly different at $p < 0.05$ according to the Games-Howell test. Source: own survey

Regional expenditures structures are briefly described in the following sections.

Local day-trippers spend the least of all segments, their total expenditures in the survey area sum up to just USD 8.29. More than 40% of their daily budget, USD 3.55, is spent in restaurants, USD 1.93 on transportation, USD 1.39 on accommodation (in cases of locals who stay at a regional destination other than their hometown), and less than USD 1.00 in each of the other categories. 19.6% of local day-trippers indicated not to spend any money at all during their trip to the SMNP.

External day-trippers account for very low expenditures within the SMNP. However, they spend more than any other visitor segment in the whole survey area. Of their total expenditures of USD 60.96, one third, USD 21.98, is spent on accommodation. In addition, external day-trippers spend, on average, USD 11.18 on transportation (included in the "other services" category in Figure 7-11), USD 9.07 in restaurants, USD 7.80 on organized tours and tourist guides in the SMNP, and USD 6.62 on souvenirs. Other categories, e.g. retail (USD 2.55) and tips (USD 1.20) are of less importance.

38.1% of external day-trippers indicated to have booked an all-inclusive package to the region, which explains the rather low average expenses in restaurants. It might also suggest that a small bias exists toward the lower end of the spectrum in terms of accommodation expenses, as some of the tourists may have indicated not to spend money on accommodation, while in fact their hotel room was already included in the package[57]. However, it also reflects the region's market position as a bargain destination. E.g., a tourism marketing study for Agadir published in 2004 reports that average expenditures for international tourists in the resort town were just USD 34.00 per person per day (SCET Maroc, 2004: 11).

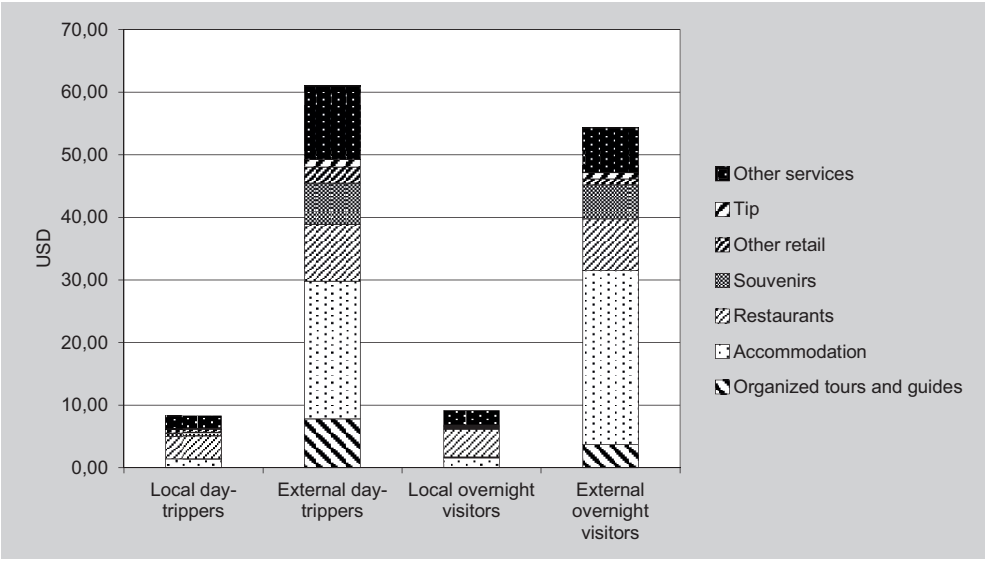
57 However, interviewers were instructed to ask package tourists about the normal room rate, or to make an educated guess depending on the hotel category and benchmarking from comparable establishments. In other cases, it was possible to figure out prices at a given hotel *a posteriori* through expert interviews with hotel managers, or an approximation of 40.0% of the price for a one-week package tour was assumed to accrue for accommodation. Thus, the bias, if existing, is expected to be relatively small.

Local overnight visitors spend USD 9.14 per person per day in the survey area during their stay in the SMNP—just slightly more than what they spend inside the national park. The largest share of their daily budget accrues to meals in snack bars or restaurants (USD 4.49).

External overnight visitors spend USD 21.40 daily outside the SMNP—which means that their total regional expenditures sum up to USD 54.28, more than half of which is spent on accommodation. In general, tourists staying inside the SMNP spend 26.5% more for their hotels than tourists staying in other parts of the survey area, due to the upscale structure of the limited number of hotels in the park. Besides, external overnight visitors spend USD 8.27 in restaurants, USD 5.46 for transport (here included in the "other services" category), USD 5.43 on souvenirs, and USD 3.69 on tour guides or organized tours.

The total regional expenditures of all visitor segments are depicted in Figure 7-11.

Figure 7-11: Expenditure structure of local/external day-trippers/overnight visitors in the survey area (both inside and outside the SMNP)



Source: own survey

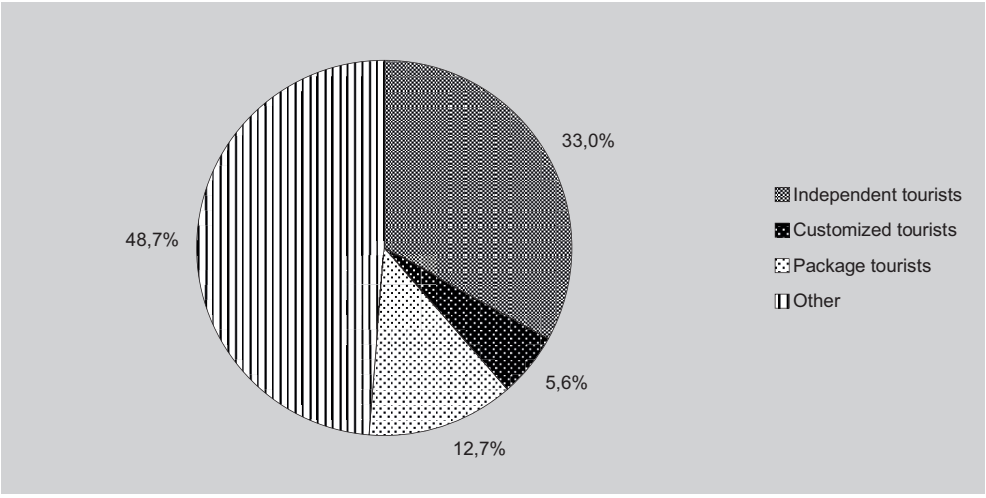
7.3.4 Segmentation of visitors in the SMNP according to patterns of trip organization

Following the criteria described in Chapter 5.3.2, visitors to the SMNP were also classified according to the degree of standardization of travel arrangements (segmentation approach 1b), distinguishing package, customized and independent tourists. As

in the SKBR, day-trippers returning the same day to their place of residence were not considered, given that the model has been developed for international tourism (Pearce, 2008: 154). Due to the high share of locals in the SMNP visitor sample and their disproportionately low average expenditures, the results of this segmentation indicate higher mean visitor expenses than described in the previous chapter. The large number of locals in the sample also implicates that almost half of all visitors were classified as "other" and thus not considered in the following analyses (cf. Figure 7-12).

Independent tourists represent the majority of the remaining visitors, representing 33.0% of all visitors in the sample. The share of independent tourists is more than twice as high as that of package tourists (12.7% of all visitors), and almost six times larger than the share of customized tourists (5.6% of all visitors).

Figure 7-12: Shares of independent, customized, and package tourists in the SMNP



Source: own survey

Thus, the ratio of independent to package tourists is comparable to the SKBR, while the relative importance of customized tourists is lower in the SMNP (not considering "other" visitors).

As in the SKBR, independent tourists are the most travel-experienced visitors of the three analyzed groups: The share of repeat visitors is 46.8% among independent travelers compared to 23.6% among customized tourists and 7.6% among package tourists (Cramér's V = 0.357, $p = 0.001$). Similarly, the shares of respondents indicating they have visited the park for at least the third time was 33.9%, 6.5%, and 0.9% among independent, customized, and package tourists respectively.

National park affinity is highest among independent tourists (34.2%), but differences between tourist types are not statistically significant. Independent tourists also account for the highest nature affinity rates (80.8% compared to 79.5% and 77.6%

among package and customized tourists), but, again, with no statistical significant results. This picture differs from the SKBR, where the touristic offer is more oriented toward nature-based tourism and ecotourism, notable with regard to special-interest customized tourists.

7.3.5 Expenditures of independent, customized and package tourists in the SMNP

The presentation of the tourist types' daily expenditures in the SMNP and the whole survey area follows the same structure as the previous chapter. All three types spend relatively little inside the SMNP. Independent tourists, spending on average USD 8.59 per person per day, account for the highest expenditures in the park, followed by customized (USD 6.76) and package tourists (USD 7.73), but mean differences are not statistically significant (ANOVA: $F(2,530) = 0.150$, $p > 0.05$) (cf. Table 7-4).

Table 7-4: Mean daily expenditures of independent, customized and package tourists in the SMNP

	a) Independent tourists	b) Customized tourists	c) Package tourists	Total
N	344	58	132	534
Expenditures (USD)	8.59	6.76	7.73	8.18

Mean differences are not statistically significant according to one-way ANOVA. Source: own survey

Again, expenditure structures of the three tourist types are briefly described as follows.

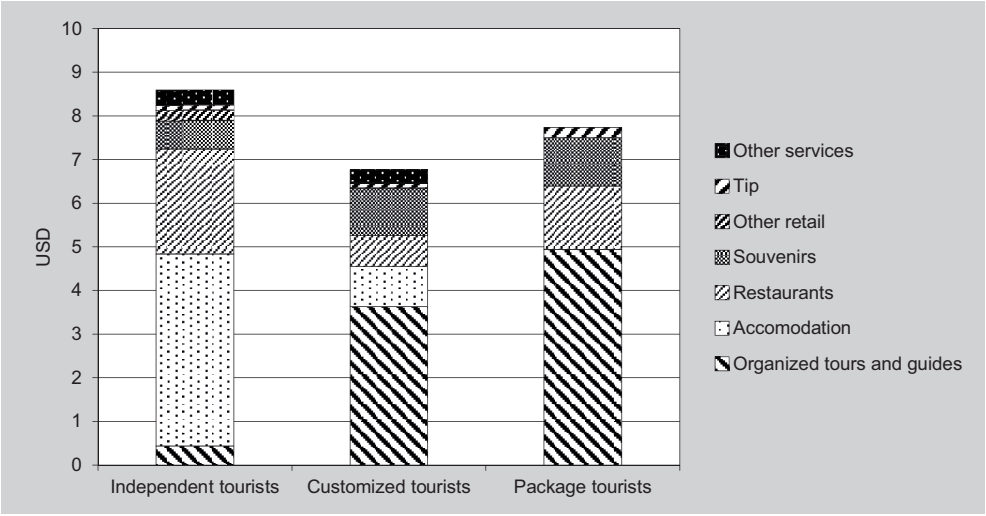
Independently traveling tourists account for the highest expenditures in the park. They spend, on average, USD 8.59 per person per day, the largest share of which accrues for accommodation expenses (USD 4.39). However, even this amount is low, which can be explained by the fact that 79.4% of independent tourists are day-trippers in the SMNP (nevertheless, the share of day-trippers is even higher among the two other tourist types).

Customized tourists spend USD 6.76 daily per person in the SMNP. USD 3.36 are spent on organized tours, USD 1.08 on souvenirs, and only decimal amounts on other categories.

Package tourists' expenses are slightly below the ones of the other groups. They spend USD 7.73 per person directly in the SMNP, the largest share of which, USD 4.94, accrues for organized tours. Other categories are of much less importance. E.g., only USD 1.45 per person is spent in restaurants inside the park, as tour operators tend to hold contracts with regional restaurants catering exclusively to clients of standardized tours, thus making it less likely that package tourists visit other restaurants on their own.

All three tourist types' expenditures inside the SMNP are depicted in more detail in Figure 7-13.

Figure 7-13: Expenditure structure of independent, customized, and package tourists in the SMNP



Source: own survey

7.3.6 Expenditures of independent, customized, and package tourists in the SNNP survey area

As expected, expenditures of independent, customized, and package tourists are between five and fourteen times higher in the total survey area than in the SMNP alone. Independent tourists spend, on average, USD 52.05. Customized tourists' expenses sum up to USD 84.72, and, as in the case of the SKBR, package tourists are the least free-spending, with mean daily expenditures of USD 51.54. A Welch test reports that statistically significant mean differences exist between groups ($F(2,123.290) = 4.088$, $p < 0.05$*). A Games-Howell test reports significant differences in spending between customized tourists and independent tourists.

Table 7-5: Mean daily expenditures of tourist types in the SMNP survey area

	a) Independent tourists	b) Customized tourists	c) Package tourists	Total
N	344	58	132	534
Expenditures (USD)	52.05[b]	84.72[a]	51.54	55.49

Letters indicate that group means are significantly different at $p < 0.05$ according to the Games-Howell test. Source: own survey

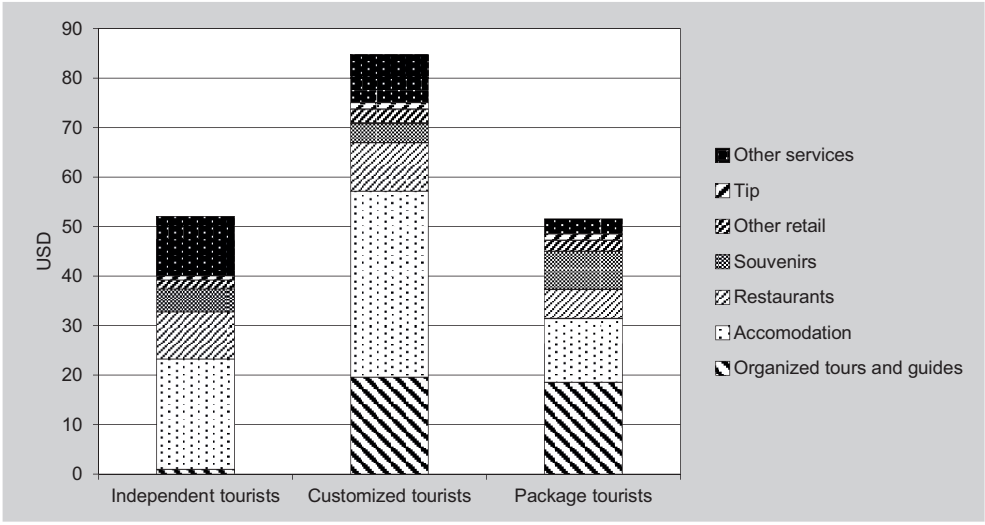
The following sections describe the regional expenditure structure of independent, customized, and package tourists.

Independent tourists spend more than 80% of regional expenditures related to their visit to the SMNP outside the actual national park. In total, their regional per capita expenditures sum up to USD 52.05, including USD 22.31 for accommodation, USD 11.13 for transport, and USD 9.48 in restaurants.

As in the SKBR, **customized tourists** in the SMNP account for the highest regional expenditures of the three tourist types. 92.0% of customized tourists' total expenses accrue outside the national park's borders. Almost half of their daily budget, USD 37.54, is spent on accommodation. Other notable categories include organized tours (USD 19.60), food and beverages in restaurants (USD 9.89), transport (USD 9.29), and souvenirs (USD 3.89).

Package tourists spend less per person per day than the two other tourist types. The largest share of their daily budget accrues to organized tours (USD 18.58), while accommodation expenses sum up to only USD 12.89 per person. Accommodation expenditures may be somewhat biased toward the lower end of the price spectrum, as some package tourists were unable to indicate the correct individual room rate at their hotel. However, this bias is expected to be limited due to the reasons described in Chapter 7.3.3. Regional expenditures structures for the three tourist types are depicted in Figure 7-14.

Figure 7-14: Expenditure structure of independent, customized and package tourists in the SMNP survey area



Source: own survey

The results suggest that the SMNP, as the SKBR, does not represent a typical post-Fordist, alternative nature-based tourism destination. The proximity to the Fordist resort town of Agadir and the predominant *3S* tourism in the region clearly influences tourism in the park. As in the SKBR, package tourists account for a substantial share of regional tourist expenditures although they are less free-spending then the other two groups, notably in comparison to customized tourists.

7.3.7 National park affinity, nature affinity and spending behavior in the SMNP

As in the SKBR case study, the regional spending behavior of visitors in the SMNP in relation to their national park affinity and travel motivations was analyzed. Again, regional expenditures refer to visitors' expenses in the survey area if not indicated otherwise (cf. Chapter 6.3.7).

In total, comparably to the case of Sian Ka'an, visitors with high national park affinity (which could, by implication, be expected to be somewhat more environmentally conscious) spend on average 13.8% more money in the survey region than tourists with low affinity rates (cf. Table 7-6). However, mean differences are relatively small and results not statistically significant.

Table 7-6: National park affinity and expenditures

	High national park affinity	Low national park affinity	Total
N	349	662	1,011
Expenditures (USD)	38.68	33.98	35.39

Mean differences are not statistically significant. Source: own survey

When visitors are distinguished according to the criteria of whether natural features played a role in their travel decision, a similar picture emerges: in general, visitors that indicated that nature protection, natural attractions or engagement in nature-related activities was at least partly among their most important reasons for visiting the SMNP, spend more money than visitors not interested in natural features (cf. Table 7-7). The result is statistically significant (Welch test: $F(1,885.392) = 16.031$, $p < 0.001$).

Table 7-7: Nature affinity and expenditures in the SMNP survey area

	High nature affinity	Low nature affinity	Total
N	769	271	1,041
Expenditures (USD)	39.06	25.00	35.39

Results are statistically significant with $p < 0.001$ according to the results of a Welch test. Source: own survey

7.4 Economic impacts of tourism in the SMNP

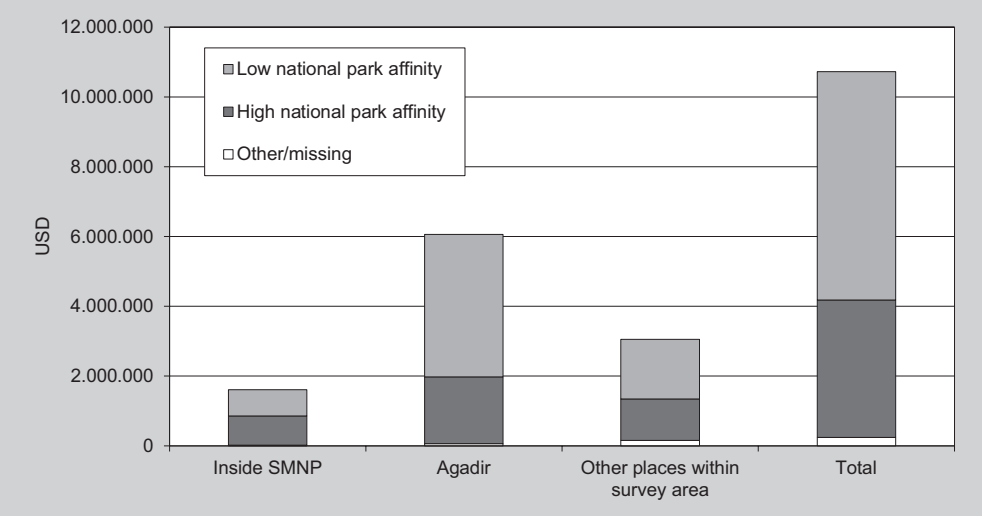
7.4.1 Tourist gross turnover

Visitors to the SMNP generate through their expenditures a total regional gross turnover of around USD 10.7 million. As shown in Figure 7-15, more than half (56.6%) of the total regional turnover is generated in the resort town of Agadir and can be attributed to tourist expenditures before and after a visit to the SMNP. In addition,

28.4% are generated in other communities adjacent to the SMNP (i.e. inside the survey region, but outside the boundaries of the national park). Finally, only 15.0% of regional turnover directly occur at businesses (mostly hotels) inside the park.

In order to estimate the SMNP's unique economic value, gross turnover generated by visitors with high national park affinity is distinguished. The latter account for 36.7% of the total regional turnover—only half as much as in the SKBR.

Figure 7-15: Regional gross turnover generated by tourism in the SMNP



Source: own survey

Regional economic impacts are calculated in the following chapter.

7.4.2 Regional economic impacts

The calculation of economic impacts is based on an input-output table for Morocco which was derived from HCP's SUTs as an industry-by-industry table based on the fixed product sales structure assumption (cf. Chapter 5.1.3.1 and Appendix 5). A regional input-output table for the survey area was constructed according to the methodology described by Flegg et al. (1995) presented in Chapter 5.1.3.2. Regional economic data from HCP's regional accounts was used to compute intraregional trade coefficients (HCP, 2010). A regional Leontief inverse matrix was calculated to determine *type I* income multipliers and economic impacts generated by tourist spending in different economic sectors. As in Flegg et al. (1995: 553), households were treated as exogenous. Due to the reasons described in Chapter 5.3.3, the following results should be interpreted as approximations rather than exact values.

As shown in Table 7-8, the total regional income effects of tourism in the SMNP

sum up to around USD 1,867,400. Based on secondary data on the regional economy, a total number of 1,639 jobs across all economic sectors can be related to tourist spending by visitors of the SMNP. This corresponds to 0.32% of the total regional labor force[66]. As indicated by the total income equivalent, 5,218 persons, both employed and non-employed household members, could make a living from the regional income generated by tourism in the SMNP. This figure corresponds to 0.34% of the population in the survey area.

If only visitors with high national park affinity were taken into account, regional income effects from tourism in the SMNP would sum up to USD 1,671,100, representing an employment equivalent of 1,467 jobs, 0.29% of the survey area's total number of employed workforce, or an income equivalent of 4,671 persons which corresponds to 0.30% of the survey area's population.

Table 7-8: Regional economic impacts of tourism in the SMNP

	High national park affinity	Low national park affinity	All visitors
Daily expenditures (USD)	38.68	33.98	35.39
	66.01	*57.57*	*60.16*
Visitor days	104,732	198,294	303,026
	53,106	*105,384*	*158,215*
Gross turnover ('000 USD)	4,050.8	6,738.3	10,725.6
	3,505.7	*6,067.4*	*9,518.4*
Income multiplier	0.170	0.177	0.174
	0.171	*0.178*	*0.176*
Total income effects ('000 USD)	688.4	1,189.6	1,867.4
	598.5	*1,082.1*	*1,671.6*
Employment equivalent (persons)	604	1,044	1,639
	525	*950*	*1,467*
Share of total number of employed persons in the survey area*	0.117	0.203	0.318
	0.102	*0.184*	*0.285*
Income equivalent (persons)	1,923	3,324	5,218
	1,672	*3,023*	*4,671*
Share of survey area's population (%)	0.124	0.214	0.337
	0.108	*0.195*	*0.301*

Values in bold print represent all visitors; values in italic refer to external visitors only. Source: own survey; Secondary data obtained from HCP (2005; 2006) and the World Bank (2012).

* Official statistical sources do not report employment data at the provincial level. Thus, the total number of employed persons in the Souss-Massa-Drâa region was adjusted by the ratio of the survey area's population to the total population of Souss-Massa-Drâa.

In light of the arguments discussed in Chapter 5.3.3, an alternative calculation was conducted, in which local visitors were excluded. The results of this more conservative estimation are represented in italics in Table 7-8. Comparable to the SKBR, in the SMNP, too, the economic importance of local visitors is rather low: They account for only 10.5% of the total regional income effects.

In total, the total regional impact of tourism in the SMNP can be expected to range from USD 598,500 to USD 1,867,400. The former is considered the most conservative approach, taking into account only non-local visitors with high national park affinity. The latter figure, on the other hand, represents the most liberal estimation, including local as well as non-local visitors with both high and low national park affinity.

7.5 Intermediate discussion: visitation, expenditures and regional economic impacts in the SMNP

With more than 300,000 visitors annually, the SMNP is one of the most important tourist attractions in a region whose major tourism hub, Agadir, accounted for 725,557 tourist arrivals in the survey year 2008 (DRT, 2008) As in the SKBR, the visitor structure in the SMNP is marked by a certain complexity. First of all, the park's role as a point of attraction for local excursionists should not be underestimated. Due to its good accessibility and the large population of 1.5 million people living in the survey area, i.e. in the SMNP's immediate vicinity or even within the park itself (cf. Chapters 4.3.2, 4.3.5), local families flock to Souss-Massa's beaches, especially on weekends or public holidays. In total, locals represent almost half of all visitors in the park.

In addition, the visitor structure is clearly influenced by the vicinity of Morocco's most important *3S* resort, Agadir, which accounts for 94.3% of hotel beds in the survey area (HCP, 2008). Not surprisingly, 47.9% of all visitors specified that Agadir was the starting point for their visit to the SMNP—either as hometown or as place of accommodation. This share is even higher when only international day-trippers are taken into account, 73.5% of which indicated to stay at a hotel in Agadir.

As in the case of the SKBR, some of the findings presented in the previous sections were expectable. For example, local visitors spend significantly less money than tourists form outside the survey area. Even local overnight stayers who spend at least one night inside the SMNP account for limited expenditures, which reflects the low regional average household income compared to the home countries of international tourists. The large share of local visitors is also reflected in the rather low mean regional expenditures per person per day, which sum up to USD 38.68.

Visitors with high national park affinity tend to have higher mean expenditures than those with low affinity rates. This finding holds true for all visitor types or segments distinguished in this study, except for package tourists. However, none of the mean differences was statistically significant. As pointed out with respect to the SKBR, where similar findings occurred, this could indicate that the stereotype of free-spending ecotourists traveling to protected areas requires further examination.

Again, a somewhat clearer tendency could be observed when visitors were classified according to their general nature affinity. Visitors who indicated at least one

nature-related trip motivation spend statistically significant more money per person than other visitors (USD 39.06 v. USD 25.00).

The low share of visitors with high national park affinity suggests ample room for improvement of marketing efforts. The results discussed in Chapter 7.2 indicate that knowledge of the SMNP is low, but the majority of visitors indicated that nature-related motivations were important for their decision to visit the area. Furthermore, visitors who know about the national park's existence tend to attach a rather high importance to its designation as a designated protected area.

Most visitors indicated that they organized their trip to the survey area as well as to the SMNP independently. However, the importance of package tourists and especially customized tourists should not be neglected. The latter spend around 60% more per person per day than either independent or package tourists and can thus be expected to attach more importance to high quality services.

Nevertheless, tourism in the SMNP does represent a significant regional economic factor, generating employment equivalents of ca. 1,500 full-time jobs. Park managers may use such data in their discussions with regional decision-takers who argue in favor of development approaches based on mass tourist infrastructure, as embodied in the new *3S* resorts under construction (cf. Chapter 4.3.1) or the designation of tourism investment zones inside the SMNP. However, relatively low average expenditures per capita and the imbalanced distribution of regional economic impacts suggest ample room for improvement. In addition, comparably to the situation in the SKBR, the support of intraregional economic linkages and the promotion of regional products for tourist consumption would increase regional income multipliers and thus economic leverage.

8 Conclusion

8.1 Synthesis: Tourism in protected areas in proximity to Fordist mass tourist bubbles

Protected areas in spatial proximity to highly developed tourist spaces hold the potential to contribute substantially to the regional economy. Furthermore, they can provide income possibilities to local communities that would otherwise be excluded from the benefits of more conventional large-scale developments.

This dissertation includes two case studies assessing the structure and regional economic impacts of tourism in coastal protected areas in the Developing World. While both studies are considered pilot surveys in their respective regional contexts, the methodology is based on extensive visitor surveys carried out in German protected areas since 2004 (Job, 2008a; Mayer et al., 2010). The two pilot studies in Mexico and Morocco confirm that the methodology can be applied in different economic and cultural contexts. The widely used input-output model employed in the two case studies is a feasible approach in the absence of secondary data on regional multipliers. Moreover, relying on input-output multipliers rather than on data obtained from third-party sources may increase international comparability.

Despite existing cultural, economical, political and physical geographic differences between the two study areas, marked similarities concerning the regional visitor structures were confirmed. Different visitor classifications based on tourism types and forms were applied, which may be of interest for different purposes and stakeholders. One result worthy of mention is the dominance of day-trippers and the importance of package tourists in both areas due to the vicinity of Fordist and neo-Fordist mass tourist bubbles. Package tourists spend less money than other segments and are thus economically less beneficial. However, protected areas such as the SKBR and the SMNP are important secondary or tertiary nuclei for package *3S* vacationists and need to better adapt to this situation. Given the economic potential as well as the potential ecological threats resulting from high numbers of visitors, package tourism within the context of protected areas is a topic that seems to require more attention from academics in the future.

Customized tourists are another important and interesting segment, if more so in the SKBR than in the SMNP. As Pearce (2008: 155-156) observed, "customized tourists exhibit particular characteristics which have hitherto been generally neglected in the literature in favor of package tourists and, to a lesser extent, independent tourists." The study strongly supports the notion that customized tourists in protected areas represent a potentially attractive clientele: In both case study areas, they spend between 52.7 and 94.5% more than the average visitor. However, the more complex behavioral patterns and motivations of customized tourists, too, require more academic research, as well as increased attention from protected area managers and the development of appropriate high-quality products by businesses.

It is noteworthy that interest for nature (as measured by nature affinity in this study) and the stricter defined commitment for nature protection (protected area affinity) are not necessarily related for protected area visitors. However, for both items, it was shown that visitors with high affinity rates tend to spend more money—although these differences were not in all cases statistically significant. Nevertheless, the findings indicate that nature-oriented visitors represent interesting market segments for regional planners. It also suggests that more categories on the nature-based/ecotourism continuum may be helpful to describe the existing types of tourism in protected areas.

Findings in both case study areas implicate that mass tourism and nature-based tourism can be mutually dependent rather than representing binary oppositions (cf. Chapter 3). Fordist *3S* tourism remains the predominant tourism type in both Agadir as well as Quintana Roo and provides a significant number of costumers for nature-based tourism in the SKBR and the SMNP. On the other hand, both protected areas offer a valuable and important amplification of the tourism spectrum in their regions, which, not least, increases the regions' attractiveness for package tourism in terms of day-trip options (Butler, 1990: 44). However, the intraregional distribution of economic benefits requires attention: notably in the SMNP, the lack of touristic offers inside the park in general and the weak involvement of the local population in particular provoke substantial economic leakage, since a large share of the turnover generated by SMNP visitors accrues in Agadir.

Ecotourism in different variations or alternative tourism is also a considerable factor in the SKBR and, albeit to a much lesser extent, in the SMNP. Both protected areas are visited by special interest tourists like birdwatchers or fly-fishermen, who tend to represent exclusive niche markets relying on tailor-made packages.

8.2 Management implications

Tourism holds the potential to support nature conservation by providing additional funding for protected areas and supporting local communities that are most affected by use restrictions. However, tourism in protected areas requires more attention by a variety of actors, including management bodies that are often still primarily focused on conservation issues, local communities that may lack necessary marketing and management skills to seize regional tourism potential, and private tour operators that often see no incentive to support conservation goals. Successful development of nature-based tourism requires an open dialogue among all those stakeholders (Brenner et al., 2008: 65).

The main challenge for policy planners, local communities, businesses, and protected area managers is to find a right mix of tourism types to foster regional development and ensure a just distribution of economic benefits, but at the same time limit ecological stress. In this respect, stakeholders should seek to better understand nature-based tourists' needs and motivations as well as their economic importance

and potential impacts on the environment. While for most package tourists on standardized day trips the protected area merely represents a tertiary nucleus discovered on-site, independent and customized tourists are more likely to see protected areas as their primary destination, stay longer and spend more money. Furthermore, package tourists are more likely to be indifferent toward nature conservation and protected areas. On the other hand, package tours follow fixed itineraries and are thus relatively easy to control and manage. One specific challenge for land managers and other regional stakeholders, notably in the SMNP, is to increase package tourists' expenditures inside protected areas. The approach of the SKBR with community-based tourism cooperatives holding the exclusive right to offer excursions inside the biosphere reserve could be an example to follow. Entrance fees, admission quotas, and official concessions to tour operators are possible policy avenues that could be employed by managers in order to control visitation and channel visitor flows.

In addition to ecological monitoring, a socioeconomic monitoring is needed that not only takes into account visitor numbers but also aspects such as movement patterns, expenditures and the economic importance of existing tourism products and services. Otherwise, management bodies face the risk of overcrowding in attractive yet ecologically sensitive areas. The SKBR and SMNP are no exception in this regard, as shown by the spatiotemporal variability in visitation numbers across different census points. Socioeconomic monitoring can provide a basis for a more efficient visitor management, both with regard to environmental soundness and financial return.

Despite their structural similarities, the two protected areas differ in several ways. Firstly, the two opposed approaches to access policy entail different management implications. The open access policy and accessability in the SMNP results in high numbers of relatively indifferent day-trippers, both locals looking for relaxation on weekends and holidays and international (package) tourists from Agadir for whom the SMNP represents a secondary or tertiary nucleus, often as part of a packaged excursion. The park management should attempt to raise the awareness for nature protection among those visitor groups by increasing the efforts for environmental education, especially regarding the park's most endangered bird, the Northern bald ibis (*Geronticus eremita*) and the existing projects for breeding species from the Sahara and releasing them into the wild. The fact that the share of visitors with high national park affinity is significantly higher in areas with information boards shows the effectiveness of such relatively cost-efficient tools for environmental education.

Providing possibilities for day-trippers to experience the park's USP may not only increase their awareness for its protection goals and acceptance of use restrictions, but can also create sources of income for both the park management and the local population and contribute to increased acceptance of the protected area. The planning of concrete measures will require specific feasibility studies and expertise, but they may include infrastructure such as an observation tower and museum with affiliated souvenir shop offering local handicrafts or other products, e.g. involving some of the existing local argan oil cooperatives, or even an outdoor enclosure to experience the Northern bald ibis.

In the SKBR, measuring the inflow of visitors is comparatively easy due to the mandatory registration and entrance fee and the limited number of only five access points, of which, as of now, only the *Arco Maya* and the lagoon of Muyil are of high relevance for tourists. However, this situation leads to a high concentration of visitors in both time and space. The study results show significant differences between visitors in terms of spending behavior and ecological awareness. The biosphere reserve management as well as the local and regional tourism entrepreneurs, notably the local tourism cooperatives, may consider a qualitative upgrading of their products in order to limit the number of visitors on-site, attract a more environmentally-conscious clientele while sustainaing economic benefits. Measures could include the enforced promotion of overnight stays in ecolodges and quality taylor-made and thus more expensive boat and birdwatching tours. Furthermore, the availability of locally produced handicrafts inside the reserve may encourage day-trippers and overnight visitors to spend a larger proportion of the daily expenditures in the local economy.

Following these issues, the next sections present an attempt to develop a conceptual model to capture the heterogeneity of tourism structures in protected areas which should help stakeholders to identify and develop nature-based tourism products in line with the goals of sustainable regional development.

8.3 Toward a product-based typology for nature-based tourism[58]

Preceding sections of this dissertation highlighted the increasing difficulties of developing tourist typologies that take into account the complexity of today's tourism system, with hybrid or multi-type tourists and multi-layered production structures. This holds true for tourism in general as well as for the subfield of nature-based tourism, the latter being far more heterogeneous than originally described. Both protected areas analyzed in this study were found to attract a diverse visitor clientele influenced by nearby Fordist mass tourist resorts and the existing "genuine" ecotouristic attractions. Following a deductive approach, a conceptual framework for nature-based tourism is proposed that attempts to overcome these shortcomings by focusing on nature-based tourism product types. The framework represents an attempt to resolve some of the discrepancy between the increasingly pluralistic tourist typologies and, especially from a managerial perspective, the necessity of providing distinguishable categories. The product-based typology described in the next section is influenced by the results and experiences from research in both the SKBR and the SMNP; however, it should be interpreted as a conceptual framework that is proposed for empirical testing.

58 The following two chapters contain passages from a published scientific paper, of which the author of this dissertation was the main contributor (Arnegger et al., 2010).

The suggested classification scheme is a two-dimensional matrix (cf. Figure 8-1). On one axis it incorporates tourists' travel motivations with respect to the relevance of nature as a point of attraction. This dimension could be related to the more sociological tourist typologies presented in Chapter 2.1.4 (Cohen, 1979; Uriely et al., 2002) and is also comparable to Weaver's (2001b: 105-106; Weaver and Lawton, 2002: 271; 2007: 1170) hard-soft continuum. The other axis represents a more supply-side-oriented dimension, namely different types of tourists' consumption habits in terms of service arrangements purchased. Referring to Pearce's (2008) segmentation of international leisure tourists, different characteristics of service arrangements in terms of product standardization are distinguished.

Figure 8-1: Classification for nature-based tourism based on nature orientation of tourism product types and service arrangement categories (with typical examples).

high "nature as point of attraction"** low

"individuality"*	travel motivations / service arrangements	nature protection	nature experience	sports and adventure	hedonistic
high	independent	scientific/professional expedition	birdwatching	classic alpinism	backpacker visitin g protected areas and nearby cultural attractions
	a la carte	excursions provided by authorities fo r visiting professional s	snorkeling tour booked on-site	whitewater rafting booked on-site	combined culture/natur e daytrip booked at a local agenc y
	customized	volunteer work in protected areas for NGO s	birding holiday with professional guide	guided fly-fishing trip s for small-sized groups	cultural/natural circui t tour often in smal l groups and over several weeks
low	fully standardized	"packaged " volunteer work in protected areas,often provided by commercial intermediarie s	standardized daytrip s to protected areas included in or booked as an add-on to all-inclusive 3-s holidays	scuba diving holiday package	standardized circui t tour organized in larger groups

*extent to which service arrangements are booked individually decreases

**relevance of nature for the product decreases

Source: Arnegger et al., 2010: 923

The two axes, therefore, also resemble the distinction between the types and forms of tourism suggested by Uriely et al. (2002). With four different characteristics on both axes, 16 different ideal types for nature-based tourism products are identified. Boundaries between these ideal types are blurred rather than sharply defined and the respective categories can be more or less distinctive from one another. Dif-

ferent types can normally exist simultaneously, depending on the size and location of the protected area.

At first, focusing on tourists' motivations, four characteristics of nature-based tourism products are differentiated. Hence, the first category, consumers of *nature protection* nature-based tourism products, can be classified as buyers of an absolute niche product, which offers participation and (direct or indirect, e.g. monetary) involvement in conservation measures. It is a kind of environmental education that is normally organized by NGOs such as the World Wide Fund for Nature, but can also be provided by for-profit organizations, as in the case of the growing segment of organized packaged volunteer tourism in developing countries. All nature-based tourism products within this category could also be identified as hard ecotourism. The second motivation category can be titled as *nature experience*. It refers to tourists whose primary interest is the observation of landscapes, flora, wildlife and habitats but without actively engaging in conservation measures. For the third motivation category, *sports and adventure* nature-based tourists, the natural environment first and foremost provides the setting and backdrop for their activities, such as hiking or rock climbing. Certain cases involve a direct consumptive usage of nature, e.g. through hunting or fishing. Finally, the *hedonistic* motivation category focuses only partly on nature experiences. Rather, the total spectrum of the trip also includes other features of the destination. These could be historical, cultural or ethnological as well as typical elements of *3S* vacations, with the visit to a protected area as an add-on.

Besides the segmentation according to nature as a point of attraction, nature-based tourism products can also be differentiated by the degree of individuality inherent in service arrangements, i.e. the extent to which travel packages are provided and booked individually. The first type, *independent* service arrangements, is highly flexible, and specific elements of the trips—except for advanced purchase of outbound transportation expenses—are normally booked spontaneously and not prior to the journey. This implies flexible itineraries, since constituent parts of the journey are determined in situ on arrival at the destination. The second type of service arrangement can be described as à la carte, a segment proposed as an extension of Pearce's (2008) original model. This kind of nature-based tourism tends to be a by-product of a longer journey, which is booked flexibly as an add-on during the main trip. The third type of service arrangement is the *customized* nature-based tourism product. The itinerary is usually exactly tailored prior to the journey by specialist niche tour operators to meet customers' expectations and needs. Finally, the fourth type of service arrangement within the segment of nature-based tourism, although in contrast to some common and more theoretical ecotourism definitions, is the *fully standardized* trip, which is by definition always organized for larger groups of tourists. Either the complete itinerary is fully arranged prior to the start of the trip by travel agents in the particular domestic markets in cooperation with inbound operators and all other kinds of intermediaries, or tourists may choose from a variety of day-trip options provided by their tour operator representative at the holiday destination. Customers are hence not in direct contact with local operators prior to the trip, unlike in the case of à la carte products described above (although the local tour operators

actually organizing the day trips might be the same in many cases). Spontaneous alterations of these service arrangements are not possible.

Referring to the degree of individuality of service arrangements and the extent of nature acting as a point of attraction, nature-based tourism products could hence be classified in 16 ideal type categories according to the scheme outlined in Figure 8-1. On the extremes there are, on the one hand, "pure" nature-based tourism products with a highly defined nature orientation and the highest degree of individuality. On the other hand, there are fully standardized circuit tours that focus on natural as well as cultural attractions and follow rigid itineraries. Between these extremes, various nature-based products can be described, from à la carte nature experiences like spontaneously booked snorkeling tours to fully standardized day trips as add-on to all-inclusive *3S* holidays. For each of the 16 categories, an illustrative example is given, e.g. a scuba holiday package as a typical "sports and adventure/fully standardized" nature-based tourism product.

Furthermore, the categories depicted in Figure 8-1 are not sharply divided from one another, and there could be exceptions from the generalized examples. White-water rafting, for instance, is suggested as a typical (à la carte) sports and adventure tourism product, although some adventure tourists may be equally interested in experiencing pristine nature or even conservation activities. However, most are primarily motivated in accessing natural settings that provide a certain level of risk and/or settings for physical exercise, which means that only limited overlapping exists between adventure tourism and ecotourism (Weaver, 2001a: 75).

As a relatively young and fast-growing market segment, nature-based tourism, once described as a typical post-Fordist niche market, increasingly shows signs of Fordist or neo-Fordist structures. Some tour operators offer small-scale, customized products to very specific customer groups, while others sell highly standardized nature-based package tours for the mass market. Consumers of nature-based tourism products can also be described as a rather heterogeneous group. Hence, the nature-based tourism segment is a complex and still-changing part of the tourism industry.

This approach intends to provide a more profound conceptual basis for understanding nature-based tourism structures. It is argued that a considerable gap exists between conceptual typologies and managerial-related categorizations of tourism. In an attempt to narrow this gap, form- and type-related attributes of nature-based tourism (namely, the individuality of service arrangements on the one hand and nature-based tourists' travel motivations on the other) are brought together. The result of this combination is presented as a classification of nature-based tourism products.

This product-oriented matrix should be understood as a deductive approach which combines elements of existing categorizations for visitor segmentation (Strasdas, 2006: 60-61; Weaver, 2001b: 105-106) and tourism distribution (Pearce, 2008: 156-157). It is proposed as a framework for further empirical testing and, in the long run, for its application as a management tool, especially for protected areas. As a first step, future research is recommended to compare different types of protected areas, to identify the tourism products offered, and to locate them within the suggested matrix. For instance, analyzing case study areas in developing, newly-industrialized,

and industrialized countries, and/or to include protected areas in spatial proximity to Fordist tourism resorts as compared with others in peripheral areas, is suggested. Subsequently, management recommendations could be developed from the conceptual model. Protected area management bodies need quantifiable information on visitation, to identify core market segments, set out suitable visitor management strategies and provide infrastructure. In combination with effective socioeconomic monitoring, the suggested classification should help them to focus on nature-based tourism products that are in accordance with protected areas' principles, to professionalize visitor management strategies, to improve visitor satisfaction and to create more sustainable forms of tourism provision.

8.4 Implications for future research

In order to support the respective protected area management bodies, regional tourism planners and entrepreneurs, it is advisable to develop a regular socioeconomic monitoring system by adapting the applied methodology (Woltering, 2012: 270-273). This will certainly not only require additional research but also a close cooperation with regional stakeholders. In this respect, the pilot study results can serve as a benchmarking for assessing future tourism development. "Successful" tourism development should thus not be defined by a sheer increase in visitor numbers, but rather by size of regional economic impacts within defined limits of environmental sustainability. Such a benchmarking should also define nature-based tourism products and visitor structures that are both ecologically sensitive and financially viable for the regional economy. In addition, future tourism planning may require studies on carrying capacities of specific sites or entire protected areas.

During the research process it became apparent that complex regional tourist structures significantly influence visitation in protected areas. The product-based classification described in the previous chapter is presented as a possible tool for both managers and academics as to take those multi-layered structures into account. However, while partly based on research experiences from the two case study areas, the typology is the result of a deductive approach. It is therefore recommendable for future research to develop indicators to determine the 16 nature-based tourism products in different protected areas with the help of quantitative visitor surveys.

Adaptations to particular conditions might be necessary, e.g. with respect to new nature-based tourism products occurring in the future or to specific characteristics of nature-based tourism in industrialized countries as compared with developing countries. Finally, although developed in the context of nature-based tourism, the application to other segments of the tourism market is also imaginable. In this case the substitution of one or both of the type- and/or form-related parameters presented here might be appropriate to describe the respective tourism.

References

Abou el Abbes B. (2005) Définition d'une Stratégie de Gestion des Aires Protégées du Maroc. Etude de Cas: Le Projet de «Parc Naturel de Jbel Moussa». Rabat: Institut Supérieur de Commerce et d'Administration des Entreprises.

Adams D. (1990) *Last Chance to See,* New York: Ballantine Books.

Adams WM. (2009) *Green Development. 3rd Edition. Environment and Sustainability in a Developing World,* Abingdon and New York: Routledge.

Aguiló E, Alegre J and Sard M. (2005) The Persistence of the Sun and Sand Tourism Model. *Tourism Management* 26: 219-231.

Alami M. (2011) Agadir/Tourisme: Une Activité à deux Vitesses. *L'Economiste*, No. 3467. Date: 02/15/2011. URL: http://www.leconomiste.com/article/agadirtourisme-une-activite-deux-vitesses. (accessed 04.09.2013).

Alami M. (2013) Taghazout: Les Premières Commercialisations en Juin. *L'Economiste*, No. 4017. Date: 04/24/2013. URL: http://www.leconomiste.com/article/905986-taghazout-les-premi-res-commercialisations-en-juin. (accessed 15.07.2013).

Almon C. (2000) Product-to-Product Tables via Product-Technology with no Negative Flows. *Economic Systems Research* 12: 43.

Archer B. (1977) *Tourism Multipliers: The State of the Art,* Bangor: University of Wales Press.

Archer B. (1984) Economic Impact: Misleading Multiplier. *Annals of Tourism Research* 11: 517-518.

Archer B and Fletcher J. (1990) Multiplier-Analysis in Tourism. *Cahiers du Tourisme.* Aix-en-Provence: Centre des Hautes Études Touristiques.

Armstrong H and Taylor J. (2000) *Regional Economics and Policy,* Oxford: Blackwell.

Arnegger J. (2010) Economic Effects of Tourism in the Souss-Massa National Park, Morocco. In: Goossen M, Elands B and van Marwijk R (eds) *Recreation, Tourism and Nature in a Changing World. Proceedings of the Fifth International Conference on Monitoring and Management of Visitor Flows in Recreational and Protected Areas.* Wageningen: Alterra, Wageningen University and Research Centre, 238-240.

Arnegger J, Woltering M and Job H. (2010) Toward a Product-based Typology for Nature-based Tourism. A Conceptual Framework. *Journal of Sustainable Tourism* 18: 915-928.

Arnegger J and Aransay N. (2011) Marokkos Nationalparks: Naturschutz und/oder touristische Inwertsetzung? *Natur und Landschaft* 86: 59-63.

Atkinson J. (1984) Flexibility, Uncertainty and Manpower Management. Sussex: University of Sussex.

Ballantine JL and Eagles PFJ. (1994) Defining Canadian Ecotourists. *Journal of Sustainable Tourism* 2: 1-6.

Bathelt H and Glückler J. (2002) *Wirtschaftsgeographie. Ökonomische Beziehungen in räumlicher Perspektive,* Stuttgart: Ulmer.

Beaumont N. (2011) The Third Criterion of Ecotourism: Are Ecotourists more concerned about Sustainability than other Tourists? *Journal of Ecotourism* 10: 135-148.

Becken, S and Job, H. (2014) Protected Areas in an era of global-local change. *Journal of Sustainable Tourism* 22: 507-527.

Beh A and Bruyere BL. (2007) Segmentation by Visitor Motivation in three Kenyan National Reserves. *Tourism Management* 28: 1464-1471.
Bélanger C-É and Sarrasin B. (1996) *Développement et Tourisme au Maroc,* Paris and Montréal: Harmattan.
Berriane M. (1983) Tourisme et Emploi: Le Cas d'Agadir. *Revue de Géographie du Maroc* 1983: 21-33.
Berriane M. (2002) Le Souss-Massa et ses Prolongements. In: Troin J-F (ed) *Maroc: Régions, Pays, Territoires.* Paris: Maisonneuve & Larose, 295-324.
Bertzky B, Corrigan C, Kemsey J, Kenney S, Ravilious C, Besançon C and Burgess N. (2012). *Protected Planet Report 2012: Tracking Progress towards global Targets for Protected Areas*. Gland, Switzerland and Cambridge, UK: IUCN and UNEP-WCMC.
Bezaury-Creel JE. (2003) El Uso de los Derechos de Desarrollo Transferibles como Herramienta de Conservación en México: El Caso de la Reserva de la Biosfera Sian Ka'an, Quintana Roo. Cancún: The Nature Conservancy.
Bezaury-Creel JE. (2005) Protected Areas and Coastal and Ocean Management in México (sic!). *Ocean & Coastal Management* 48: 1016-1046.
BirdLife International. (2011) *Important Bird Areas Factsheet: Parc National de Souss-Massa and Aglou*. URL: http://www.birdlife.org/datazone/sitefactsheet.php?id=6513. (accessed 03.03.2011).
Björk P. (2000) Ecotourism from a Conceptual Perspective, an Extended Definition of a Unique Tourism Form. *International Journal of Tourism Research* 2: 189-202.
Blamey RK and Braithwaite VA. (1997) A Social Values Segmentation of the Potential Ecotourism Market. *Journal of Sustainable Tourism* 5: 29-45.
Bleses P. (2007) Input-Output-Rechnung. *Wirtschaft und Statistik* 2007: 86-96.
Bonham CA, Sacayon E and Tzi E. (2008) Protecting Imperiled "Paper Parks": Potential Lessons from the Sierra Chinajá, Guatemala. *Biodiversity and Conservation* 17: 1581-1593.
Boorstin DJ. (1964) *The Image. A Guide to Pseudo-Events in America,* New York: Harper & Row.
Bouchaou L, Michelot JL, Vengosh A, Hsissou Y, Qurtobi M, Gaye C, Bullen TD and Zuppi G. (2008) Application of Multiple Isotopic and Geochemical Tracers for Investigation of Recharge, Salinization, and Residence Time of Water in the Souss-Massa Aquifer, Southwest of Morocco. *Journal of Hydrology* 352: 267-287.
Boulding K. (1994) The Economics of the Coming Spaceship Earth. In: Daly H and Townsend K (eds) *Valuing the Earth. Economics, Ecology, Ethics.* Cambridge, MA.: MIT Press.
Bowden C, Aghnaj A, Smith K and Ribi M. (2003) The Status and Recent Breeding Performance of the Critically Endangered Northern Bald Ibis Geronticus eremita Population on the Atlantic Coast of Morocco. *Ibis* 145: 419-431.
Boyd SW and Butler RW. (2000) Tourism and National Park: The Origin of the Concept. In: Butler RW and Boyd SW (eds) *Tourism and National Parks: Issues and Implications.* Chichester: John Wiley & Sons, 13-27.
Brand S. (1997) On the Appropriate Use of Location Quotients in Generating Regional Input-Output Tables: A Comment. *Regional Studies* 31: 791-794.
Brandon KE and Wells M. (1992) Planning for People and Parks: Design Dilemmas. *World Development* 20: 557-570.

Brenner L. (2005) State-planned Tourism Destinations: The Case of Huatulco, Mexico. *Tourism Geographies* 7: 138-164.
Brenner L and Fricke J. (2007) The Evolution of Backpacker Destinations: the Case of Zipolite, Mexico. *International Journal of Tourism Research* 9: 217-230.
Brenner L, Arnegger J and Job H. (2008) Management of Nature-based Tourism in Protected Areas: the Case of the Sian Ka'an Biosphere Reserve, Mexico. In: Ramos AD and Jímenez DP (eds) *Tourism Development: Economics, Management and Strategy.* Hauppage, NY: Nova Science Publishers, 47-69.
Brenner L. (2010) Gobernanza Ambiental, Actores Sociales y Conflictos en las Áreas Naturales Protegidas Mexicanas. *Revista Mexicana de Sociología* 72: 283-310.
Brenner L and Job H. (2012) Challenges to Actor-oriented Environmental Governance: Examples from Three Mexican Biosphere Reserves. *Tijdschrift voor economische en sociale geografie* 103: 1-19.
Britton S. (1982) The Political Economy of Tourism in the Third World. *Annals of Tourism Research* 9: 331-358.
Britton S. (1991) Tourism, capital, and place: towards a critical geography of tourism. *Environment and Planning D: Society and Space* 9: 451-478.
Brohman J. (1996) New Directions in Tourism for Third World Development. *Annals of Tourism Research* 23: 48-70.
Bussolo M and Roland-Holst D. (1993) A Detailed Input-Output Table for Morocco, 1990. *OECD Development Centre Working Paper* 90.
Butcher J. (2003) *The Moralisation of Tourism. Sun, Sand ... and Saving the World?*, London and New York: Routledge.
Butcher J. (2006) The United Nations International Year of Ecotourism: a critical analysis of development implications. *Progress in Development Studies* 6: 146-156.
Butcher J. (2007) *Ecotourism, NGOs and Development. A Critical Analysis,* Abingdon and New York: Routledge.
Butler RW. (1980) The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources. *Canadian Geographer* 14: 5-12.
Butler RW. (1990) Alternative Tourism: Pious Hope or Trojan Horse? *Journal of Travel Research* 28: 40-45.
Butler RW. (1999) Sustainable Tourism: A State-of-the-Art Review. *Tourism Geographies* 1: 7-25.
Butler RW. (2006a) The Tourism Area Life Cycle, Vol. 2. Conceptual and Theoretical Issues. Clevedon: Channel View.
Butler RW. (2006b) The Tourism Area Life Cycle, Vol. 1. Applications and Modifications. Clevedon: Channel View.
Capistran O. (2010) El Arribo de tres Cruceros dará a Mahahual un Millón de Dólares. *El Periódico de Quintana Roo*, Date: 05/22/2010. URL: http://www.elperiodico.com.mx/noticias/el-arribo-de-tres-cruceros-dara-a-mahahual-un-millon-de-dolares-42022.shtml. (accessed 18.12.2010).
Carlowitz HCv. (1713/1732) *Sylvicultura Oeconomica oder Anweisung zur Wilden Baum-Zucht.,* Leipzig: Braun.
Carrier JG and Macleod DVL. (2005) Bursting the Bubble: The Socio-cultural Context of Ecotourism. *The Journal of the Royal Anthropological Institute* 11: 315-334.

Castañeda Rincón J. (2006) Las Áreas Naturales Protegidas de México: De su Origen Precoz a su Consolidación Tardía. *Scripta Nova*, X. URL: http://www.ub.edu/geocrit/sn/sn-218-13.htm. (accessed 05.10.2011).
Catusse M, Cattedra R and Idrissi Janati Mh. (2007) Decentralisation and its Paradoxes in Morocco. URL: http://halshs.archives-ouvertes.fr/docs/00/35/51/14/PDF/Catusse_Decentralisation_in_Morocco.pdf. (accessed 04.09.2013).
Ceballos-Lascuraín H. (1991) Tourism, Ecotourism and Protected Areas. *Parks* 2: 31-35.
Centre Régional d'Invesstissement Souss Massa Drâa. (2008) *Secteur du Tourisme*. URL: http://www.cri-agadir.ma/french/tourisme.html. (accessed 16.07.2013).
Chambers D. (2007) An Agenda for Cutting-Edge Research in Tourism. In: Tribe J and Airey D (eds) *Developments in Tourism Research.* Oxford: Elsevier, 233-246.
Chung BR. (1999) A Community Strategy for Coastal Zone Management of Xcalak, Mexico. Narragansett, RI: USAID, Amigos de Sian Ka'an, Coastal Resource Center, Conservation International Mexico, UQroo.
Clancy M. (2001) *Exporting Paradise. Tourism and Development in Mexico,* Oxford: Pergamon.
Clarc J. (2009) Costa Maya: Mexico's much visited, little known Tourist Region. *USA Today*, Date: 3/27/2009. URL: http://www.usatoday.com/travel/destinations/2009-03-26-costa-maya-mexico_N.htm?POE=TRVISVA.(accessed 06.12.2010).
Clearing House Mechanism on Biodiversity of Morocco. (2008) *Projet de Loi N° 07 - 22 relative aux Aires Protégées*. URL: http://ma.chm-cbd.net/manag_cons/esp_prot/stat_nat/projet-de-loi-n-07-22-relative-aux-aires. (accessed 15.05.2010).
Clearing House Mechanism on Biodiversity of Morocco. (2009) *Convention on Biological Diversity*. URL: http://ma.chm-cbd.net/. (accessed 12.05.2010).
Clearing House Mechanism on Biodiversity of Morocco. (2010) *Parcs Nationaux*. URL: http://ma.chm-cbd.net/manag_cons/esp_prot/stat_nat/parc_nat. (accessed 15.05.2010).
Clearing House Mechanism on Biodiversity of Morocco. (2011) *Parc National du Souss-Massa*. URL: http://www.biodiv.be/maroc/manag_cons/esp_prot/stat_nat/manag_cons/esp_prot/stat_nat/parc_nat/fol356194. (accessed 06.03.2011).
Cohen E. (1972) Toward a Sociology of International Tourism. *Social Research* 39: 164-182.
Cohen E. (1979) A Phenomology of Tourist Experiences. *Sociology* 13: 179-201.
Cohen E. (1988) Authenticity and Commoditization in Tourism. *Annals of Tourism Research* 15: 371-386.
Comisión Nacional de Areas Naturales Protegidas. (2007) *Reserva de la Biósfera Sian Ka'an: Informes de Visitación para el año 2006* (unpublished data).
Comisión Nacional de Areas Naturales Protegidas. (2011) *Comisión Nacional de Áreas Naturales Protegidas*. URL: http://www.conanp.gob.mx. (accessed 10.05.2011).
Comisión Nacional de Areas Naturales Protegidas. (various years) *Reserva de la Biósfera Sian Ka'an: Informes de Visitación* (unpublished data).
Comisión Nacional para el Conocimiento y Uso de la Biodiversidad. (2011) *Corredor Biológico Mesoamericano México*. URL: http://www.biodiversidad.gob.mx/cbmm/CBMM/TEM/11.htm. (accessed 10.05.2011).

Commune Urbaine d'Agadir. (2009) Plan Communal de Développement Agadir 2010-2016. Agadir: Commune Urbaine d'Agadir.
Cook PS. (2011) Impacts of Visitor Spending on the Local Economy. Yosemite National Park, 2009. In: National Park Service (ed) *Natural Resource Report.* Fort Collins: National Park Service.
Cooper C and Jackson S. (1989) Destination Life Cycle : The Isle of Man Case Study. *Annals of Tourism Research* 16: 377-398.
Costa Maya. (2010) *Beach Clean-up Volunteer*. URL: http://www.puertocostamaya.com/tours/mexico/beach_clean_up. (accessed 16.07.2013).
Cothran DA and Cothran CC. (1998) Promise or Policital Risk for Mexican Tourism. *Annals of Tourism Research* 25: 477-497.
Crompton JL, Lee S and Shuster TJ. (2001) A Guide for Undertaking Economic Impact Studies: The Springfest Example. *Journal of Travel Research* 40: 79-87.
Dasmann RF, Milton JP and Freeman PH. (1973) *Ecological Principles for Economic Development,* London: John Wiley & Sons.
Dawson CP. (2001) Ecotourism and Nature-based Tourism: One End of the Tourism Opportunity Spectrum? In: McCool SF and Moisey RN (eds) *Tourism, Recreation and Sustainability. Linking Culture and the Environment.* Wallingford and New York: CABI Publishing, 41-54.
De Beuckelaer A. (1996) A Closer Examination on Some Parametric Alternatives to the ANOVA F-test. *Statistical Papers* 37: 291-305.
de Haas H. (2005) Morocco's Migration Transition: Trends, Determinants and future Scenarios. *MDR working papers* 3. URL: http://www.heindehaas.com/Publications/De%20Haas%202005%20(MDR%203%20-%20No%2009)%20Morocco's%20Migration%20Transition%20-%20Trends,%20Determinants%20and%20Future%20Scenarios.pdf. (accessed 20.07.2013).
Délegation Régionale du Tourisme d'Agadir. (2008) Unpublished data on tourist arrivals and hotel capacity. Agadir.
Département de l'Environnement. (2009) Quatrième Rapport National sur la Biodiversité. Rabat.
Deutscher ReiseVerband. (2009) Fakten und Zahlen zum deutschen Reisemarkt 2008. In: ReiseVerband D (ed) *Fakten und Zahlen zum deutschen Reisemarkt.* Berlin.
Diehl JM. (1977) *Varianzanalyse,* Frankfurt a. M.
Doğan HZ. (1989) Forms of Adjustment. Sociocultural Impacts of Tourism. *Annals of Tourism Research* 16: 216-236.
Dresner S. (2008) *The Principles of Sustainability,* London: Earthscan.
Drissi-Habti. (1997) *Le Tourisme Marocain: Analyse Spatio-Économique d'un Système soumis à la Mondialisation*. (Dissertation*).* Nice: University Nice-Sophia Antipolis.
Drumm A and Moore A. (2005) *An Introduction to Ecotourism Planning,* Arlington: The Nature Conservancy.
Dudley N. (2008) Guidelines for Applying Protected Area Management Categories. Gland: IUCN.
Dunford M and Benko G. (1991) Neo-Fordism or Post-Fordism? Some Conclusions and Further Remarks. In: Dunford M and Benko G (eds) *Industrial Change and Regional Development.* London and New York: Belhaven Press, 268-305.

Eagles PFJ, McLean D and Stabler MJ. (2000) Estimating the Tourism Volume and Value in Parks and Protected Areas in Canada and the USA. *The George Wright Forum* 17: 62-82.

Eagles PFJ, McCool SF and Haynes CD. (2002) *Sustainable Tourism in Protected Areas. Guidelines for Planning and Management,* Gland: IUCN.

Eagles PFJ and Hillel O. (2008) Improving Protected Area Finance through Tourism. In: Secretariat of the Convention on Biological Diversity (ed) *Protected Areas in Today's World: Their Values and Benefits for the Welfare of the Planet.* Montreal: CBD.

Eastmond A, García de Fuentes A and Córdoba y Ordoñez J. (2000) Recent Population and Education Trends on the Yucatán Peninsula. In: Lutz W, Prieto L and Sanderson W (eds) *Population, Development, and Environment on the Yucatán Peninsula: From Ancient Maya to 2030.* Laxenburg: International Institute for Applied Systems Analysis, 54-72.

Edensor T. (2001) Performing Tourism, Staging Tourism. (Re)producing Tourist Space and Practice. *tourist studies* 1: 59-81.

El Bekkay M. (2008) Le Parc National du Souss Massa - Instrument de Gestion Durable et de Valorisation des Ressources Naturelles. In: Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification and Gesellschaft für Technische Zusammenarbeit (eds) *Atelier International sur le Tourisme Durable dans les Aires Protégées du Maroc. Rapport 2007.* Rabat, 15-16.

Enzensberger HM. (1958) Vergebliche Brandung der Ferne. *Merkur* 12: 701-720.

Eurostat. (2008) *Eurostat Manual of Supply, Use and Input-Output Tables,* Luxembourg: European Commission.

Fennel D. (2008) *Ecotourism,* London & New York: Routledge.

Fennell D. (2001) A Content Analysis of Ecotourism Definitions. *Current Issues in Tourism* 4: 403-421.

Fideicomiso para la Promoción Turística de la Riviera Maya. (2006) *Riviera Maya. Análisis de Mercado. Agosto 2006. Estadísticas*. Playa del Carmen, Mexico.

Fideicomiso para la Promoción Turística de la Riviera Maya. (2008) *Barómetro Turístico de la Riviera Maya. Playa del Carmen: Fideicomiso de la Promoción Turística de la Riviera Maya*. Playa del Carmen, Mexico.

Flegg AT, Webber CD and Elliott MV. (1995) On the Appropriate Use of Location Quotients in Generating Regional Input-Output Tables. *Regional Studies* 29: 547-561.

Flegg AT and Webber CD. (1997) On the Appropriate Use of Location Quotients in Generating Regional Input-Output Tables: Reply. *Regional Studies* 31: 795-805.

Flegg AT and Webber CD. (2000) Regional Size, Regional Specialization and the FLQ Formula. *Regional Studies* 34: 563-569.

Fletcher J. (1989) Input-Output Analysis and Tourism Impact Studies. *Annals of Tourism Research* 16: 514-529.

Fondo Nacional de Fomento al Turismo. (2006) *Principales Indicadores Turísticos: Cancún*. Mexico City.

Fondo Nacional de Fomento al Turismo. (2010) *FONATUR*. URL: http://www.fonatur.gob.mx/es/index.asp. (accessed 07.11.2010).

Forschungsgemeinschaft Urlaub und Reisen e.V. (2009) *ReiseAnalyse 2009. First Results ITB 2009*. Kiel.

Forum Marocain du Tourisme. (2011) *Statistiques*. URL: http://www.fmdt.ma/?mod=Stats. (accessed 04.02.2011).
Franchimont J and Saadaoui EM. (2001) *National Study on Biodiversity. Synthesis Report*. Rabat : Département de l'Environnement.
Geer JG. (1988) What do Open-ended Questions Measure? *Public Opinion Quarterly* 52: 365-371.
Gibbs S. (2009) *Swine flu strikes Mexico tourism*. URL: http://news.bbc.co.uk/2/hi/americas/8099100.stm. (accessed 24.07.2013).
Gobierno Municipal de Solidaridad Q.R. (2007) *Actualización del Programa de Desarrollo Urbano del Centro de Población de Tulúm, 2006-2030.* Playa del Carmen, Mexico.
Goeldner CR and Ritchie JRB. (2006) *Tourism - Principles, Practices, Philosophies*, Hoboken: Wiley.
Goeury D. (2007) Place et Rôle des ONG dans l'Acceptation des Parcs Nationaux: Le Cas du Haut-Atlas Oriental Marocain. *Géocarrefour* 82: 231-241.
Goodall B and Bergsma J. (1990) Destinations as Marketed in Tour Operators' Brochures. In: Ashworth G and Goodall B (eds) *Marketing Tourism Places.* London: Routledge.
Goodwin H. (1996) In Pursuit of Ecotourism. *Biodiversity and Conservation* 5: 277-291.
Graburn N. (1967) The Eskimos and 'Airport Art'. *Trans-action* 4: 28-34.
Grainger A. (2004) Introduction. In: Purvis M and Grainger A (eds) *Exploring Sustainable Development. Geographical Perspectives.* London: Earthscan Publications, 1-32.
Griggs D, Stafford-Smith M, Gaffney O, Rockström J, Öhman M C, Shyamsundar P, Steffen W, Glaser G, Kanie N and Noble I. (2013). Policy: Sustainable development goals for people and planet. Nature, 495(7441): 305-307.
Gunn CA. (1972) *Vacationscape: Designing Tourist Regions,* Austin: University of Texas.
Hall CM. (2006) Introduction. In: Butler RW (ed) *The Tourism Area Life Cycle. Applications and Modifications.* Clevedon: Channel View Publications, xv-xviii.
Hall CM and Frost W. (2009) Introduction: The Making of the National Parks Concept. In: Frost W and Hall CM (eds) *Tourism and National Parks: International Perspectives on Development, Histories and Change.* Abgingdon & New York: Routledge, 3-15.
Halpenny E. (2007) Financing Parks throuth Marketing: A Case Study of Ontario Parks. In: Bushell R and Eagles P (eds) *Tourism and Protected Areas: Benefits Beyond Boundaries.* Wallingford & Cambridge: CAB International, 277-300.
Hamilton-Smith E. (1987) Four Kinds of Tourism? *Annals of Tourism Research* 14: 332-344.
Hammer T. (2003) Großschutzgebiete neu interpretiert als Instrumente nachhaltiger Regionalentwicklung. In: Hammer T (ed) *Grossschutzgebiete: Instrumente nachhaltiger Regionalentwicklung.* Munich: Oekom, 9-34.
Hannemann T and Job H. (2003) Destination „Deutsche Nationalparke" als touristische Marke. *Tourism Review* 58: 6-17.
Hardin G. (1968) The Tragedy of the Commons. *Science* 162: 1243-1248.
Harding R. (2006) Ecologically Sustainable Development: Origins, Implementation and Challenges. *Desalination* 187: 229-239.

Harif R, Laurent F and Djellouli Y. (2009) L`Écotourisme dans le Parc National de Souss Massa - Maroc. *Colloque International: Tourisme, Secteur de l'Économie de Substitution et de Développement Durable.* Algiers.
Hartung J, Argaç D and Makambi KH. (2002) Small Sample Properties of Tests on Homogeneity in One-way Anova and Meta-analysis. *Statistical Papers* 43: 197-235.
Harvey D. (1992) *The Condition of Postmodernity. An Enquiry Into the Origins of Cultural Change,* Cambridge, Mass.: Blackwell.
Haut Commissariat au Plan. (2005) *Recensement Général de la Population et de l'Habitat de 2004. Population Légale du Maroc*. Rabat.
Haut Commissariat au Plan. (2006) *Annuaire Statistique Régional Souss-Massa-Drâa. Année 2006,* Agadir: Haut Commissariat au Plan: Direction Régionale d'Agadir.
Haut Commissariat au Plan. (2007a) *Profil Maroc*. URL: http://www.hcp.ma/Profil.aspx. (accessed 24.03.2011).
Haut Commissariat au Plan. (2007b) Agriculture 2030. Quels Avenirs pour le Maroc? Haut Commissariat au Plan (ed) *Prospective Maroc 2030.* Rabat.
Haut Commissariat au Plan. (2009a) *Annuaire Statistique du Maroc, 2009,* Rabat.
Haut Commissariat au Plan. (2009b) *Le Maroc des Régions 2008,* Rabat.
Haut Commissariat au Plan. (2010) *Comptes Régionaux. Produit Intérieur Brut et Dépenses de Consommation Finale des Ménages. 2004 et 2007*. Rabat.
Haut Commissariat au Plan. (various years) *Annuaire Statistique du Maroc,* Rabat.
Hawkins DE and Lamoureux K. (2001) Global Growth and Magnitude of Ecotourism. In: Weaver DB (ed) *The Encyclopedia of Ecotourism.* Wallingford and New York: CABI Publishing, 63-72.
Haywood KM. (1986) Can the Tourist-Area Life Cycle be made operational? *Tourism Management* 7: 154-167.
Hediger W. (1999) Reconciling "Weak" and "Strong" Sustainability. *International Journal of Social Economics* 26: 1120-1143.
Hettne B. (1995) *Development Theory and the Three Worlds,* Harlow: Longman Scientific & Technical.
Hiernaux-Nicolas D. (1999) Cancún Bliss. In: Judd DR and Fainstein SS (eds) *The Tourist City.* New Haven & London: Yale University Press, 124-139.
Higgins BR. (1996) The Global Structure of the Nature Tourism Industry: Ecotourists, Tour Operators, and Local Businesses. *Journal of Travel Research* 35: 11-18.
Hillali M. (2007) *La Politique du Tourisme au Maroc. Diagnostic, Bilan et Critique,* Paris: Harmattan.
Honey M. (1999) *Ecotourism and Sustainable Development. Who Owns Paradise?*, Washington, DC: Island Press.
Horic N. (2010) *Naturtourismus und seine Akteure in der Wertschöpfungskette im Biosphärenreservat Sian Ka'an (Mexiko)*. (unpublished MA thesis). Würzburg: Julius-Maximilians Universität.
Hüttl H. (2006) Handlungsorientierte Analyse der Akteure und ihrer raumbedeutsamen Verhaltensweisen in Großschutzgebieten. Das Fallbeispiel Biosphärenreservat Sian Ka'an (Mexiko). (unpublished Diploma thesis). Munich: Ludwig-Maximilians Universität.
Hvenegaard GT. (2002) Using Tourist Typologies for Ecotourism Research. *Journal of Ecotourism* 1: 7-18.

Hwang Y-H and Fesenmaier DR. (2011) Unplanned Tourist Attraction Visits by Travellers. *Tourism Geographies* 13: 398-416.
Ingram CD and Durst PB. (1989) Nature-Oriented Tour Operators: Travel to Developing Countries. *Journal of Travel Research* 28: 11-15.
Instituto Nacional de Estadística y Geografía. (1971) *IX Censo General de Población. 1970. 28 de Enero de 1970. Territorio de Quintana Roo*. Aguascalientes.
Instituto Nacional de Estadística y Geografía. (1990) *Censo General de Población y Vivienda 1990*. URL: http://www.inegi.org.mx/est/contenidos/proyectos/ccpv/cpv1990/default.aspx. (accessed 09.11.2010).
Instituto Nacional de Estadística y Geografía. (2000) *XII Censo de Población y Vivienda*. URL: http://www.inegi.org.mx/est/contenidos/Proyectos/ccpv/cpv2000/default.aspx. (accessed 16.11.2010).
Instituto Nacional de Estadística y Geografía. (2004) *Censos Económicos 2004*. URL: http://www.inegi.org.mx/est/contenidos/proyectos/ce/ce2004/default.aspx. (accessed 01.09.2011).
Instituto Nacional de Estadística y Geografía. (2006a) Sistema de Cuentas Nacionales de México. Cuenta Satélite del Turismo de México 1999-2004. *Sistema de Cuentas Nacionales de México*. Aguascalientes.
Instituto Nacional de Estadística y Geografía. (2006b) *II Conteo de Población y Vivienda*. URL: http://www.inegi.org.mx/est/contenidos/proyectos/ccpv/cpv2005/Default.aspx. (accessed 11.11.2010).
Instituto Nacional de Estadística y Geografía. (2008) *Anuario Estadístico de Quintana Roo 2008*. URL: http://seplader.seige.qroo.gob.mx/seigeweb/IndiceAnuario2008.php. (accessed 22.11.2010).
Instituto Nacional de Estadística y Geografía. (2009a) *Anuario Estadístico de Quintana Roo 2009*. URL: http://www.inegi.org.mx/est/contenidos/espanol/sistemas/sisnav/default.aspx?proy=aee&edi=2009&ent=23. (accessed 09.11.2010).
Instituto Nacional de Estadística y Geografía. (2009b) *Censos Económicos 2009*. URL: http://www.inegi.org.mx/est/contenidos/espanol/proyectos/censos/ce2009/default.asp?s=est&c=14220. (accessed 16.11.2010).
Instituto Nacional de Estadística y Geografía. (2010a) *Estadísticas Históricas de México*. Aguascalientes.
Instituto Nacional de Estadística y Geografía. (2010b) *Censo de Población y Vivienda 2010*. URL: http://www3.inegi.org.mx/Sistemas/temasV2/Default.aspx?s=est&c=17484. (accessed 15.07.2013).
Instituto Nacional de Estadística y Geografía. (2010c) *Banco de Información Económica*. URL: http://dgcnesyp.inegi.org.mx/bdiesi/bdie.html. (accessed 11.11.2010).
Instituto Nacional de Estadística y Geografía. (2013) Sistema de Cuentas Nacionales de México: Cuenta Satélite del Turismo de México 2007-2011. Año base 2003. *Sistema de Cuentas Nacionales de México.* Aguascalientes.
International Union for Conservation of Nature. (1980) *World Conservation Strategy. Living Resource Conservation for Sustainable Development*. Gland.
International Union for Conservation of Nature. (1994) *Guidelines for Protected Area Management Categories*. Gland.
Ioannides D. (1998) Tour Operators: The Gatekeepers of Tourism. In: Ioannides

D and Debbage KG (eds) *The Economic Geography of the Tourist Industry. A Supply-side Analyis.* London and New York: Routledge, 139-158.
Ioannides D and Debbage KG. (1998) Neo-Fordism and Flexible Specialization in the Travel Industry. Dissecting the Polyglot. In: Ioannides D and Debbage KG (eds) *The Economic Geography of the Tourist Industry. A Supply-side Analysis.* London and New York: Routledge, 99-122.
Jaakson R. (2004) Beyond the Tourist Bubble? Cruiseship Passengers in Port. *Annals of Tourism Research* 31: 44-60.
Jacobsen JKS. (2003) The Tourist Bubble and the Eurpeanisation of Holiday Travel. *Tourism and Cultural Change* 1: 71-87.
Janssen J and Laatz W. (2007) *Statistische Datenanalyse mit SPSS für Windows. Eine anwendungsorientierte Einführung in das Basissystem und das Modul Exakte Tests,* Berlin, Heidelberg and New York: Springer.
Job H. (2003) „Reisestile": Modell des raumzeitlichen Verhaltens von Reisenden. *Tourismus Journal* 7: 355-376.
Job H, Metzler D and Vogt L. (2003) *Inwertsetzung alpiner Nationalparks. Eine regionalwirtschaftliche Analyse des Tourismus im Alpenpark Berchtesgaden.,* Kallmünz, Germany: Lassleben.
Job H and Weizenegger S. (2003) Tourismus in Entwicklungsländern. In: Becker C, Hopfinger H and Steinecke A (eds) *Geographie der Freizeit und des Tourismus: Bilanz und Ausblick.* Munich: Oldenbourg, 629-651.
Job H, Harrer B, Metzler D and Hajizadeh-Alamdary D. (2005a) Ökonomische Effekte von Großschutzgebieten: Untersuchung der Bedeutung von Großschutzgebieten für den Tourismus und die wirtschaftliche Entwicklung der Region, Bonn: BfN.
Job H, Paesler R and Vogt L. (2005b) Geographie des Tourismus. In: Schenk W and Schliephake K (eds) *Allgemeine Anthropogeographie.* Gotha: Klett-Perthes, 581-628.
Job H, Harrer B, Metzler D and Hajizadeh-Alamdary D. (2006) Ökonomische Effekte von Großschutzgebieten: Leitfaden zur Erfassung der regionalwirtschaftlichen Wirkungen des Tourismus in Großschutzgebieten, Bonn: BfN.
Job H. (2008a) Estimating the Regional Economic Impact of Tourism to National Parks. Two Case Studies from Germany. *GAIA* 17: 134-142.
Job H. (ed) (2008b) *Die Destination Nationalpark Bayerischer Wald als regionaler Wirtschaftsfaktor*. Grafenau: Nationalparkverwaltung Bayerischer Wald.
Job H, Arnegger J and Hnaka A. (2008) Les effets économiques régionaux des activités touristiques dans le Parc National de Souss-Massa. Würzburg/Rabat: Institute of Geography/GTZ.
Job H, Woltering M and Harrer B. (2009) *Regionalökonomische Effekte des Tourismus in deutschen Nationalparken,* Bonn: BfN.
Job H, Becken S and Sacher P. (2013a). Wie viel Natur dar sein? Schutzgebietskonzepte im Wandel der Zeit. *Standort* 37: 204-210.
Job H, Kraus F, Merlin M and Woltering M. (2013b): *Wirtschaftliche Effekte des Tourismus in Biosphärenreservaten.* Bonn-Bad Godesberg: BfN (in print).
Job H and Paesler F. (2013) Links between Nature-based Tourism, Protected Areas, Poverty Alleviation and Crises - The Example of Wasini Island (Kenya). *Journal of Outdoor Recreation and Tourism* 1-2: 18-28.

Johnson RL and Moore E. (1993) Tourism Impact Estimation. *Annals of Tourism Research* 20: 279-288.
Johnston CS. (2001a) Shoring the Foundations of the Destination Life Cycle Model, Part 1: Ontological and Epistemological Considerations. *Tourism Geographies* 3: 2-28.
Johnston CS. (2001b) Shoring the Foundations of the Destination Life Cycle Model, Part 2: A Case Study of Kona, Hawai'i Island. *Tourism Geographies* 3: 135-164.
Jones A. (1987) Green Tourism. *Tourism Management* 8: 354-356.
Jones GA and Ward PM. (1998) Privatizing the Commons: Reforming the Ejido and Urban Development in Mexico. *International Journal of Urban and Regional Research* 22: 76-93.
Juaneda C and Sastre F. (1999) Balearic Islands Tourism: A Case Study in Demographic Segmentation. *Tourism Management* 20: 549-552.
Judd DR. (1999) Constructing the Tourist Bubble. In: Judd DR and Fainstein SS (eds) *The Tourist City.* New Haven and London: Yale University Press, 35-53.
Kagermeier A. (2004) Tourismus im Maghreb: Quo Vadis? In: Meyer G (ed) *Die Arabische Welt im Spiegel der Kulturgeographie.* Mainz: ZEFAW, Geographisches Institut der Universität Mainz, 390-399.
Kahn RF. (1931) The Relation of Home Investment to Unemployment. *The Economic Journal* 41: 173-198.
Keiner M. (2005) *History, Definition(s) and Models of Sustainable Development*. URL: http://e-collection.library.ethz.ch/eserv/eth:27943/eth-27943-01.pdf. (accessed 04.09.2013).
Keynes JM. (1933) The Multiplier. *The New Statesman and Nation.* London, 405-407.
Kromrey H. (2006) *Empirische Sozialforschung. Modelle und Methoden der standardisierten Datenerhebung und Datenauswertung,* Stuttgart: Lucius & Lucius.
Kronenberg T. (2009) Construction of Regional Input-Output Tables Using Nonsurvey Methods: The Role of Cross-Hauling. *International Regional Science Review* 32: 40-64.
L'Economiste. (2009) Le Plan Azur «glisse» vers 2016. *L'Economiste*, No. 3008. Date: 04/21/2009. URL: http://www.leconomiste.com/article/le-plan-azur-glisse-vers-2016. (accessed 21.08.2013).
Lahr M. (1993) A Review of the Literature Supporting the Hybrid Approach to Constructing Regional Input-Output Models. *Economic Systems Research* 5: 277.-293.
Lash SM and Urry J. (1994) *Economies of Signs and Space,* London: Sage.
Law G. (1999) *Administrative Subdivisions of Countries,* Jefferson, NC: McFarland & Company.
Le Matin. (2008) Biodiversité: Menace sur les Aires Protégées. Faute de Moyens, ces Espaces risquent de disparaître. *Le Matin (online edition)*, URL: http://www.lematin.ma/Actualite/Journal/ArticlePrint.asp?id=93976. (accessed 04.03.2011).
Le Soir Echos. (2010) Plan Azur: État des Lieux. *Le Soir Echos*, Date: 07/16/2010. URL: http://www.lesoir-echos.com/2010/07/16/plan-azur-etat-des-lieux/. (accessed 17.02.2011).
Leiper N. (1990) Tourist Attraction Systems. *Annals of Tourism Research* 17: 367-384.
Leontief WW. (1936) Quantitative Input and Output Relations in the Economic Systems of the United States. *The Review of Economic Statistics* 18: 105-125.

Lew AA. (1987) A Framework of Tourist Attraction Systems. *Annals of Tourism Research* 14: 553-575.
Liu Z. (2003) Sustainable Tourism Development: A Critique. *Journal of Sustainable Tourism* 11: 459-475.
Lix LM, Keselman JC and Keselman HJ. (1996) Consequences of Assumption Violations Revisited: A Quantitative Review of Alternatives to the One-way Analysis of Variance F Test. *Review of Educational Research* 66: 579-619.
Loomis J and Caughlan L. (2006) The Importance of Adjusting for Trip Purpose in Regional Economic Analyses of Tourist Destinations. *Tourism Economics* 12: 33-43.
López Monzalvo ML and Pech Pech G. (2008) Gasto Turístico. *Boletín Turístico de Cancún* 1: 7-11.
Lowyck E, Van Langenhove L and Bollaert L. (1992) Typologies of Tourist Roles. In: Johnson P and Thomas B (eds) *Choice and Demand in Tourism.* London: Mansell Publishing, 13-32.
Lybbert TJ, Barrett CB and Narjisse H. (2002) Market-based Conservation and Local Benefits: The Case of Argan Oil in Morocco. *Ecological Economics* 41: 125-144.
MacCannell D. (1973) Staged Authenticity: Arrangements of Social Space in Tourist Settings. *The American Journal of Sociology* 79: 589-603.
MacCannell D. (1976) *The Tourist. A New Theory of the Leisure Class,* London: The Macmillan Press.
Maslow A. (1954) *Motivation and Personality,* New York: Harper.
Mayer, M. (2013) *Kosten und Nutzen des Nationalparks Bayerischer Wald. Eine ökonomische Bewertung unter Berücksichtigung von Tourismus und Forstwirtschaft*. Munich: oekom.
Mayer, M. (2014) Can nature-based tourism benefits compensate for the costs of national parks? A study of the Bavarian Forest National Park, Germany. *Journal of Sustainable Tourism* 22: 561-583.
Mayer M, Müller M, Woltering M, Arnegger J and Job H. (2010) The Economic Impact of Tourism in Six German National Parks. *Landscape and Urban Planning* 97: 73-82.
McCann P. (2002) *Urban and Regional Economics,* Oxford: Oxford University Press.
McIntyre G. (1993) *Sustainable Tourism Development: Guide for Local Planners,* Madrid: World Tourism Organization.
Meadows DH, Meadows DL, Randers J and Behrens WW. (1972) *Limits to Growth. A Report for The Club of Rome's Project on the Predicament of Mankind,* New York: Universe Books.
Médail F and Quezél P. (1999) Biodiversity Hotspots in the Mediterranean Basin: Setting Global Conservation Priorities. *Conservation Biology* 13: 1510-1513.
Mehmetoglu M. (2007a) Nature-based Tourism: A Contrast to Everyday Life. *Journal of Ecotourism* 6: 111-126.
Mehmetoglu M. (2007b) Nature-based Tourists: The Relationship Between their Trip Expenditures and Activities. *Journal of Sustainable Tourism* 15: 200-215.
Mendeş M and Akkartal E. (2010) Comparison of ANOVA F and WELCH Tests with Their Respective Permutation Versions in Terms of Type I Error Rates and Test Power. *Kafkas Universitesi Veteriner Fakultesi Dergisi* 16: 711-716.

Metzler D. (2007) *Regionalwirtschaftliche Effekte von Freizeitgroßeinrichtungen: Eine methodische und inhaltliche Analyse*, Kallmünz, Germany: Lassleben.
Meyer-Arendt KJ. (2009) The Costa Maya: Evolution of a Touristic Landscape. Études Caribéennes: 2-13.
Miernyk WH. (1956) *The Elements of Input-Output Analysis*. URL: http://www.rri.wvu.edu/WebBook/Miernykweb/new/coverpage.htm. (accessed 09.03.2010).
Milian J. (2007) Le Dilemme entre Développement et Protection dans les Montagnes du Maroc - Le Cas des Parcs du Moyen Atlas. *Géocarrefour* 82: 177-186.
Ministère de l'Économie et des Finances. (2010) *Régions du Maroc: Contributions Sectorielles à la Création de la Richesse Nationale*. Rabat.
Ministère du Tourisme et de l'Artisanat. (2010) *Vision Stratégique de Développement Touristique «Vision 2020»*. Rabat.
Ministère du Tourisme et de l'Artisanat. (2011) *Vision 2011 et Avenir*. URL: http://www.tourisme.gov.ma/francais/2-Vision2010-Avenir/1-en-bref/enbref.htm. (accessed 15.02.2011).
Ministère du Tourisme et de l'Artisanat. (2013) *Tourisme en Chiffres*. URL: http://www.tourisme.gov.ma/francais/5-Tourisme-chiffres/ChiffresCles.htm. (accessed 16.07.2013).
Mittermeier RA and Goettsch de Mittermeier C. (1992) *La Importancia de la Diversidad Biológica de México*. URL: https://library.conservation.org/Published%20Documents/1992/La%20Importancia%20de%20la%20Diversidad%20Biologica%20de%20Mexico.pdf. (accessed 25.05.2011).
Mo C-m, Howard DR and Havitz ME. (1993) Testing an International Tourist Role Typology. *Annals of Tourism Research* 20: 319-335.
Mok C and Iverson JT. (2000) Expenditure-based Segmentation: Taiwanese Tourists to Guam. *Tourism Management* 21: 299-305.
Moncada Jímenez P. (2007) *Evaluación y Perspectivas del Crecimiento Turístico en el Caribe Mexicano (Quintana Roo, México)*. Madrid: Universidad Antonio de Nebrija.
Mora Flores M and Moncada Jímenez P. (2008) La Industria Hotelera de Cancún en 2008. *Boletín Turístico de Cancún* 1: 2-6.
Mowforth M, Charlton C and Munt I. (2008) *Tourism and Responsibility. Perspectives from Latin America and the Caribbean*, London and New York: Routledge.
Mowforth M and Munt I. (2009) *Tourism and Sustainability. Development, Globalisation and New Tourism in the Third World*, London and New York: Routledge.
Murray G. (2007) Constructing Paradise: the Impacts of Big Tourism in the Mexican Coastal Zone. *Coastal Management* 35: 339-355.
Nachid N. (2005) Les Aires Protégées du Maroc. Un Moyen pour la Conservation à la Valorisation du Patrimoine Naturel et Culturel National (Conference Presentation). *Forum Régional du Secteur Forestier.* Rabat: Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification.
National Park Service. (2011) *NPS Stats*. URL: http://www.nature.nps.gov/stats/index.cfm. (accessed 29.04.2011).
Nilsson C and Gotmark F. (1992) Protected Areas in Sweden: Is Natural Variety Adequately Represented? *Conservation Biology* 6: 232-242.
Noticaribe. (2008) Halla Fonatur Anomalías en Proyecto Costa Maya. *Noticaribe.com.*

mx, Date: 03/01/2008. URL: http://www.noticaribe.com.mx/rivieramaya/2008/02/advierten_fuga_de_inversiones_de_costa_maya.html. (accessed 01.12.2010).
Noticaribe. (2009) Presentan Plan "Costa Chetumal". *Noticaribe.com.mx*, Date: 09/18/2009. URL: http://www.noticaribe.com.mx/chetumal/2009/09/presentan_plan_costa_chetumal.html. (accessed 02.12.2010).
Noticaribe. (2010) Confirma Fonatur interés para desarrollar "Punta Calentura". *Noticaribe.com.mx*, Date: 05/02/2010. URL: http://www.noticaribe.com.mx/chetumal/2010/05/confirma_fonatur_interes_para_desarrollar_punta_calentura.html. (accessed 02.12.2010).
Observatoire du Tourisme. (2012) *Annuaire Statistique 2011*. Casablanca.
Oppermann M. (1993) Tourism Space in Developing Countries. *Annals of Tourism Research* 20: 535-556.
Organization for Economic Co-operation and Development. (2011) *OECD Input-Output Database*. URL: http://stats.oecd.org/index.aspx. (accessed 01.09.2011).
Palma J. (2013) Vislumbran Puente Gran Costa Maya-Chetumal. *Novedades de Quintana Roo*, Date: 04/28/2013. URL: http://sipse.com/novedades/proyecto-puente-grand-costa-maya-chetumal-28545.html. (accessed 16.07.2013).
Palmer AL, Sesé A and Montaño JJ. (2005) Tourism and Statistics. Bibliometric Study 1998-2002. *Annals of Tourism Research* 32: 167-178.
Paradise TR. (2005) Perception of Earthquake Risk in Agadir, Morocco: A Case Study from a Muslim Community. *Environmental Hazards* 6: 167-180.
Park D-B and Yoon Y-S. (2009) Segmentation by Motivation in Rural Tourism: A Korean Case Study. *Tourism Management* 30: 99-108.
Parnwell M. (2002) Agropolitan and Bottom-up Development. In: Desai V and Potter R (eds) *The Companion to Development Studies.* London: Arnold.
Pearce D. (2008) A Needs-Functions Model of Tourism Distribution. *Annals of Tourism Research* 35: 148-168.
Pearce PL. (1982) *The Social Phsychology of Tourist Behaviour,* Oxford: Pergamon Press.
Pearce PL. (1988) *The Ulysses Factor. Evaluating Visitors in Tourist Settings*, New York: Springer.
Peña Chapa JL, Martín Castillo M and Gonzalez Avila JC. (2000) The Performance of the Economy of the Yucatán Peninsula from 1970-1993. In: Lutz W, Prieto L and Sanderson W (eds) *Population, Development, and Environment on the Yucatán Peninsula: From Ancient Maya to 2030.* Laxenburg: International Institute for Applied Systems Analysis, 108-119.
Pérez Villegas G and Carrascal E. (2000) El Desarrollo Turístico en Cancún, Quintana Roo y sus Consecuencias sobre la Cubierta Vegetal. *Investigaciones Geográficas. Boletín del Instituto de Geografía, UNAM*: 145-166.
Pi-Sunyer O, Thomas RB and Daltabuit M. (1999) *Tourism and Maya Society in Quintana Roo, Mexico,* Storrs, Providence, Amherst and New Haven: Latin American Studies Consortium of New England.
Pleumarom A. (2001) *Campaign On Corporate Power In Tourism (COCPIT)*. URL: http://www.twnside.org.sg/title/eco1.htm. (accessed 03.04.2009).
Poon A. (1993) *Tourism, Technology and Competitive Strategies,* Wallingford: CAB International.

Préfecture d'Agadir Ida Outanane. (2007) *Monographie de la Préfecture d'Agadir Ida Outanane*. Agadir.
Reed N. (1964) *The Caste War of Yucatan,* Stanford: Stanford University Press.
Reid LJ and Andereck KL. (1989) Statistical Analyses Use in Tourism Research. *Journal of Travel Research* 28: 21-24.
Ribi M. (2008) La Place du Tourisme Durable dans les Aires Protégées. In: Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification and Gesellschaft für Technische Zusammenarbeit (eds) *Atelier International sur le Tourisme Durable dans les Aires Protégées du Maroc. Rapport 2007.* Rabat, 13-14.
Rist G. (2009) *The History of Development. From Western Origins to Global Faith,* New Delhi: Academic Foundation.
Ritzer G. (1983) The "McDonaldization" of Society. *Journal of American Culture* 6: 100-107.
Ritzer G and Liska A. (1997) 'McDisneyization' and 'Post-Tourism'. Complementary Perspectives on Contemporary Tourism. In: Rojek C and Urry J (eds) *Touring Cultures. Transformations of Travel and Theory.* London and New York: Routledge, 96-109.
Ritzer G. (1998) *The McDonaldization Thesis. Explorations and Extensions,* London: Sage.
Ross S and Wall G. (1999) Ecotourism: Towards Congruence Between Theory and Practice. *Tourism Management* 20: 123-132.
Rostow WW. (1960) *The Stages of Economic Growth. A Noncommunist Manifesto,* Cambridge: Cambridge University Press.
Round JI. (1978) An Interregional Input-Output Approach to the Evaluation of Nonsurvey Methods. *Journal of Regional Science* 18: 179-194.
Runte A. (1973) 'Worthless Lands': Our National Parks. *American West* 10: 4-11.
Runte A. (1977) The National Park Idea: Origins and Paradox of the American Experience. *Journal of Forest History* 21: 64-75.
Ryan C, Hughes K and Chirgwin S. (2000) The Gaze, Spectacle and Ecotourism. *Annals of Tourism Research* 27: 148-163.
SCET Maroc. (2004) *Projet de Développement Touristique de la Destination Agadir. Tâche 1: Positionnement*. Agadir.
Schaffer WA and Chu K. (1969) Nonsurvey Techniques for Constructing Regional Interindustry Models. *Papers in Regional Science* 23: 83-101.
Schmidt M. (2005) Mit den Ressourcen schonend und nachhaltig umgehen. *Konturen* 07: 8-11.
Secretaría de Turismo del Estado de Quintana Roo. (2013) *Indicadores Turísticos*. URL: http://sedetur.qroo.gob.mx/index.php/estadisticas/indicadores-turisticos. (accessed 16.07.2013).
Sécretariat d'État au Plan et au Développement Régional. (1978) *Annuaire Statistique du Maroc 1978,* Rabat.
Shackley M. (1998) Conclusions. In: Shackley M (ed) *Visitor Management: Case Studies from World Heritage Sites.* Oxford: Butterworth-Heinemann, 194-205.
Shaw G and Williams AM. (2002) *Critical Issues in Tourism. A Geographical Perspective,* Oxford: Blackwell.

Sirakaya E and McLellan RW. (1998) Modeling Tour Operators' Voluntary Compliance with Ecotourism Principles: A Behavioral Approach. *Journal of Travel Research* 36: 42-55.
Sirakaya E, Sasidharan V and Sönmez S. (1999) Redefining Ecotourism: The Need for a Supply-Side View. *Journal of Travel Research* 38: 168-172.
Slocombe DS and Dearden P. (2009) Protected Areas and Ecosystem-based Management. In: Dearden P and Rollins R (eds) *Parks and Protected Areas in Canada: Planning and Management.* Third Edition ed. Don Mills, Ont.: Oxford University Press, 342-370.
Smith JS. (2009) Three Generations of International Tourist Resorts in Mexico. *Geographische Rundschau International Edition* 5: 4-10.
Solares-Leal I and Alvarez-Gil O. (2003) *Socioeconomic Assessment of Punta Allen: A Tool for the Management of a Coastal Community*. Cancún: CONANP.
Sosa Ferreira AP. (2011) *Características Sociodemográficas en Poblaciones de Centros Turísticos de Rápido Crecimiento: Majahual.* (Dissertation). Mexico City: Universidad Nacional Autónoma de México.
Souss-Massa-Drâa CR. (2010) *Région Souss Massa-Drâa*. Agadir.
Stabler MJ. (1997) An Overview of the Sustainable Tourism Debate and the Scope and Content of this Book. In: Stabler MJ (ed) *Tourism & Sustainability: Principles to Practice.* Wallingford: CAB International, 1-22.
Storper M and Walker R. (1989) *The Capitalist Imperative: Territory, Technology, and Industrial Growth,* New York: Blackwell.
Strasdas W. (2001) Ökotourismus in der Praxis - Zur Umsetzung der sozioökonomischen und naturschutzpolitischen Ziele eines anspruchsvollen Tourismuskonzeptes in Entwicklungsländern, Ammerland, Germany: Studienkreis für Tourismus.
Strasdas W. (2006) The Global Market for Nature-based tourism. In: Job H and Li J (eds) *Natural Heritage, Ecotourism and Sustainable Development.* Kallmünz, Germany: Lassleben, 55-64.
Stynes DJ. (2008) Impacts of Visitor Spending on the Local Economy. Zion National Park, 2006. In: National Park Service (ed). East Lansing, MI: Department of Community, Agriculture, Recreation and Resource Studies, Michigan State University.
Surma D and Dominianni M. (2009) Agadir Earthquake. In: Surma D and Dominianni M (eds) *Reconstruction of the Global City. How Earthquakes Alter the Built Environment.* Ithaca, NY: Cornell University.
Tampieri A. (2006) Mulit-objective Optimation of Land Use Patterns in the Sian Ka'an Biosphere Reserve Catchment, Quintana Roo, Mexico. *Environmental Engineering.* Copenhagen: Technical University of Denmark.
Tangley L. (1988) A new Era for Biosphere Reserves. *BioScience* 38: 148-155.
Telfer DJ and Sharpley R. (2008) *Tourism and Development in the Developing World,* London and New York: Routledge.
Terborgh J and van Schaik C. (2002) Why the World Needs Parks. In: Terborgh J, van Schaik C, Davenport L, et al. (eds) *Making Parks Work: Strategies for Preserving Tropical Nature.* Washington, DC: Island Press, 3-14.

Thage B. (2005) Symmetric Input-Output Tables: Compilation Issues. In: Association II-O (ed) *Fifteenth International Input-Output Conference.* Beijing: IIOA, 22.
The Economist Intelligence Unit. (2008) *Morocco. Country Profile 2008*. London.
The Encyclopedia of Earth. (2008) *Sian Ka'an Biosphere Reserve, Mexico*. URL: http://www.eoearth.org/article/Sian_Ka'an_Biosphere_Reserve,_Mexico#gen7. (accessed 22.09.2011).
The International Ecotourism Society. (1991) *Definitions and Principles*. URL: http://www.ecotourism.org/webmodules/webarticlesnet/templates/eco_template.aspx?articleid=95&zoneid=2. (accessed 10.07.2008).
The World Bank. (2013) *Data*. URL: http://data.worldbank.org/. (accessed 27.09.2013).
Thiam B and Rboub A. (2008) Plan Azur: La Face cachée d'une Formule séduisante. *L'Economiste*, No. 2884. Date: 10/20/2008. URL: http://www.leconomiste.com/article/plan-azur-la-face-cachee-d-une-formule-seduisante. (accessed 24.09.2013).
Thrane C. (1997) Values as Segmentation Criteria in Tourism Research: the Norwegian Monitor Approach. *Tourism Management* 18: 111-113.
Tipa G and Welch R. (2006) Comanagement of Natural Resources: Issues of Definition From an Indigenous Community Perspective. *The Journal of Applied Behavioral Science* 42: 373-391.
Tobias D and Mendelsohn R. (1991) Valuing Ecotourism in a Tropical Rain-Forest Reserve. *Ambio* 20: 91-93.
Tohmo T. (2004) New Developments in the Use of Location Quotients to Estimate Regional Input-Output Coefficients and Multipliers. *Regional Studies* 38: 43-54.
Tooman LA. (1997) Applications of the Life-Cycle Model in Tourism. *Annals of Tourism Research* 24: 214-234.
Toothaker LE. (1992) *Multiple Comparison Procedures,* Thousand Oaks, CA: Sage Publications Inc.
Torres R. (2000) Linkages between Tourism and Agriculture in Quintana Roo, Mexico. *Geography.* Davis, CA: University of California.
Torres R. (2002) Cancun's Tourism Development from a Fordist Spectrum of Analysis. *tourist studies* 2: 87-116.
Torres R. (2003) Linkages between Tourism and Agriculture in Mexico. *Annals of Tourism Research* 30: 546-566.
Torres R and Momsen J. (2005a) Planned Tourism Development in Quintana Roo, Mexico: Engine for Regional Development or Prescription for Inequitable Growth. *Current Issues in Tourism* 8: 259-285.
Torres R and Momsen J. (2005b) Gringolandia: The Construction of a New Tourist Space in Mexico. *Annals of the Association of American Geographers* 95: 314-335.
Travis AS. (1982) Managing the Environmental and Cultural Impacts of Tourism and Leisure Development. *Tourism Management* 3: 256-262.
Troin J-F. (2002) *Maroc: Régions, Pays, Territoires*. Paris: Maisonneuve et Larose.
Truett LJ and Truett DB. (1982) Public Policy and the Growth of the Mexican Tourism Industry, 1970-1979. *Journal of Travel Research* 20: 11-19.
Turner L and Ash J. (1975) *The Golden Hordes. International Tourism and the Pleasure Periphery*, London: Constable.
UNESCO - MAB. (2010) *Biosphere Reserves World Network*. Paris.

UNESCO - MAB. (2011a) *Biosphere Reserves - Learning Sites for Sustainable Development*. URL: http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/. (accessed 05.05.2011).
UNESCO - MAB. (2011b) *MAB Biosphere Reserves Directory. Biosphere Reserve Information: Morocco, Arganeraie*. URL: http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&code=MOR+01. (accessed 03.03.2011).
UNESCO. (2013) *World Heritage Convention*. URL: http://whc.unesco.org/. (accessed 15.08.2013).
UNESCO World Heritage Centre. (2008a) *Operational Guidelines for the Implementation of the World Heritage Convention*. Paris.
UNESCO World Heritage Centre. (2008b) *World Heritage Information Kit*, Paris.
United Nations. (1999) Handbook of Input-Output Table Compilation and Analysis. *Studies in Methods. Handbook of National Accounting.* New York: United Nations Department for Economic and Social Affairs, Statistics Division.
United Nations Environment Programme - World Conservation Monitoring Centre. (2008) *Sian Ka'an. Yucatan, Mexico*. URL: http://www.unep-wcmc.org/sites/wh/pdf/Sian%20Ka%27an%20Mexico.pdf (accessed 24.11.2011).
United Nations Environment Programme - World Conservation Monitoring Centre. (2013). Indigenous and Community Conserved Areas. URL: http://www.iccaregistry.org/en/home (accessed 01.10.2013).
United Nations Environment Programme. (2011) *World Database on Protected Areas*. URL: http://www.wdpa.org. (accessed 04.05.2011).
United Nations Human Settlements Programme and United Nations Development Programme. (2004) Profil Environnemental d'Agadir. *Agendas 21 Locaux pour la Promotion de l'Environnement et du Développement Durable en Milieu Urbain.* Agadir.
United States Agency for International Development. (2006) *Promoting Rural Tourism. Final Report of the Morocco Rural Tourism Program*. Rabat.
Uriely N, Yonay Y and Simchai D. (2002) Backpacking Experiences: A Type and Form Analysis. *Annals of Tourism Research* 29: 520-538.
Uriely N. (2005) The Tourist Experience: Conceptual Developments. *Annals of Tourism Research* 32: 199-216.
Urry J. (1995) *Consuming Places,* London and New York: Routledge.
Urry J. (2003) *The Tourist Gaze,* London: Sage.
van den Berghe PL. (1995) Marketing Mayas: Ethnic Tourism Promotion in Mexico. *Annals of Tourism Research* 22: 568-588.
Vanhove N. (1997) Mass Tourism: Benefits and Costs. In: Wahab S and Pigram JJ (eds) *Tourism, Development and Growth. The Challenge of Sustainability.* London and New York: Routledge, 50-77.
Vargas-del-Río D. (2010) *Espacios Comunitarios Sujetos a Conservación y Turismo: Retos para la Gestión Costera Participativa en México*. (Dissertation). Barcelona: Universidad Politecnica de Cataluña.
Vargas Aguayo A. (1981) Análisis del Turismo Receptivo y Egresivo en México. In: Banco de México (ed) *Documento, Vol. 35.* Mexico City.

Varillas A. (2013) QRoo propone nuevo Centro Turístico en Gran Costa Maya. *El Universal*, Date: 04/17/2013. URL: http://www.eluniversal.com.mx/notas/917364.html. (accessed 16.07.2013).
Verdeguer E. (2005) Turismo en Marruecos: Retos y Oportunidades. *Economía Exterior* 2005: 119-124.
Vorlaufer K. (1996) *Tourismus in Entwicklungsländern. Möglichkeiten und Grenzen einer nachhaltigen Entwicklung durch Fremdenverkehr,* Darmstadt: Wissenschaftliche Buchgesellschaft.
Wall G. (1997) Scale Effects on Tourism Multipliers. *Annals of Tourism Research* 24: 446-450.
Wall Reinius S and Fredman P. (2007) Protected Areas as Attractions. *Annals of Tourism Research* 34: 839-854.
Walpole M and Goodwin H. (2000) Local Economic Impacts of Dragon Tourism in Indonesia. *Annals of Tourism Research* 27: 559-576.
Warde P. (2011) The Invention of Sustainability. *Modern Intellectual History* 8: 153-170.
Weaver DB. (2001a) Ecotourism in the Context of Other Tourism Types. In: Weaver DB (ed) *The Encyclopedia of Ecotourism.* Wallingford and New York: CAB International, 73-84.
Weaver DB. (2001b) Ecotourism as Mass Tourism: Contradiction or Reality? *Cornell Hotel and Restaurant Administration Quarterly* 42: 104-112.
Weaver DB and Lawton LJ. (2002) Overnight Ecotourist Market Segmentation in the Gold Coast Hinterland of Australia. *Journal of Travel Research* 40: 270-280.
Weaver DB. (2005) Comprehensive and Minimalist Dimensions of Ecotourism. *Annals of Tourism Research* 32: 439-455.
Weaver DB and Lawton LJ. (2007) Twenty Years On: The State of Contemporary Ecotourism Research. *Tourism Management* 28: 1168-1179.
Weber K. (2001) Outdoor adventure tourism: A Review of Research Approaches. *Annals of Tourism Research* 28: 360-377.
Weizenegger S. (2003) *Akteursorientiertes Großschutzgebietsmanagement. Beispiele aus Afrika südlich der Sahara,* Kallmünz, Germany: Lassleben.
Weizenegger S. (2006) The TALC and Protected Natural Areas: African Examples. In: Butler RW (ed) *The Tourism Area Life Cycle, Vol. 2: Conceptual and Theoretical Issues.* Clevedon, Buffalo and Toronto: Channel View Publications, 124-137.
Wetlands International. (2011) *The Ramsar Sites Database*. URL: http://ramsar.wetlands.org/Database/AbouttheRamsarSitesDatabase/tabid/812/language/en-US/Default.aspx. (accessed 03.03.2011).
Wheeller B. (1991) Tourism's Troubled Times. Responsible Tourism is not the Answer. *Tourism Management* 12: 91-96.
Wheeller B. (2004) The Truth? The Hole Truth. Everything but the Truth. Tourism and Knowledge: A Septic Sceptic's Perspective. *Current Issues in Tourism* 7: 467 - 477.
Wheeller B. (2006) The King is Dead. Long Live the Product. Elvis, Authenticity, Sustainability and the Product Life Cycle. In: Butler RW (ed) *The Tourism Area Life Cycle: Applications and Modifications.* Clevedon: Channel View Publications, 339-348.

Wickens E. (2002) The Sacred and the Profane: A Tourist Typology. *Annals of Tourism Research* 29: 834-851.
Wight PA. (2001) Ecotourists: Not a Homogenous Market Segment. In: Weaver DB (ed) *The Encyclopedia of Ecotourism.* Wallingford and New York: CABI Publishing, 37-62.
Wittemyer G, Elsen P, Bean W, Burton ACO and Brashares JS. (2008) Accelerated Human Population Growth at Protected Area Edges. *Science* 321: 123-126.
Woltering M. (2012) *Tourismus und Regionalentwicklung in deutschen Nationalparke.* (Dissertation). Würzburg: Julius-Maximilians Universität.
World Commission on Environment and Development. (1987) *Our Common Future*. New York: United Nations General Assembly.
World Tourism Organization. (2004) *Sustainable Development of Tourism: Mission Statement*. URL: http://www.unwto.org/sdt/mission/en/mission.php. (accessed 19.04.2011).
World Tourism Organization. (2005) *Tourism and the world economy*. URL: http://www.unwto.org/facts/eng/economy.htm. (accessed 24.03.2009).
World Tourism Organization. (2006) *Tourism Market Trends, 2006 Edition*. Madrid.
World Tourism Organization. (2008) *Tourism Highlights. 2008 Edition.* Madrid.
World Tourism Organization. (2010) *Tourism Highlights. 2010 Edition*. Madrid.
World Tourism Organization. (2012) *Tourism Highlights. 2012 Edition*. Madrid.
Yannakis A and Gibson H. (1992) Roles Tourists Play. *Annals of Tourism Research* 19: 287-303.
Yeung HW-c. (1994) Critical reviews of geographical perspectives on business organizations and the organization of production: towards a network approach. *Progress in Human Geography* 18: 460-490.
Zografos C and Allcroft D. (2007) The Environmental Values of Potential Ecotourists: A Segmentation Study. *Journal of Sustainable Tourism* 15: 44-66.

Appendix

Appendix 1: SIOT for Mexico (mid-2000s; in MXN)

Column Sector	C01T05 Agriculture, hunting, forestry and fishing	C10T14 Mining and quarrying	C15T16 Food products, beverages and tobacco	C17T19 Textiles, textile products, leather and footwear	C20 Wood and products of wood and cork	C21T22 Pulp, paper, paper products, printing and publishing	C23 Coke, refined petroleum products and nuclear fuel	C24 Chemicals and chemical products	C25 Rubber and plastics products	C26 Other non-metallic mineral products	C27 Basic metals	C28 Fabricated metal products except machinery and equipment	C29 Machinery and equipment n.e.c	C30 Office, accounting and computing machinery	C31 Electrical machinery and apparatus n.e.c	C32 Radio, television and communication equipment	C33 Medical, precision and optical instruments	C34 Motor vehicles, trailers and semi-trailers	C35 Other transport equipment	C36T37 Manufacturing n.e.c; recycling	C40T41 Electricity, gas and water supply	C45 Construction	C50T52 Wholesale and retail trade; repairs
Row Sector																							
C01T05 Agriculture, hunting, forestry and fishing	40,844.2	1.3	164,923.7	4,514.3	9,424.1	8.4	0.8	1,066.3	442.9	144.9	1.1	0.7	0.8	1.3	0.8	0.0	0.0	3.8	0.0	94.5	2.0	1,734.9	100.6
C10T14 Mining and quarrying	91.3	5,640.5	1,027.5	68.9	4.9	67.8	158,648.6	88,196.4	26.9	9,807.5	14,910.9	34.0	215.4	27.0	8.5	0.0	0.0	125.7	0.0	486.8	1,781.1	11,495.1	28.8
C15T16 Food products, beverages and tobacco	30,347.6	222.3	95,894.6	3,608.7	49.4	431.5	76.9	1,330.1	200.8	224.7	232.7	168.5	110.7	409.4	123.8	0.0	0.0	639.9	0.0	139.1	302.1	735.3	3,249.4
C17T19 Textiles, textile products, leather and footwear	762.0	48.9	2,190.1	26,879.5	56.5	1,320.0	153.8	637.7	415.3	536.3	808.1	319.6	161.4	681.3	389.9	0.0	0.0	3,595.6	0.0	1,562.8	212.5	660.1	5,892.8
C20 Wood and products of wood and cork	215.8	652.6	174.8	140.4	3,450.0	164.7	17.0	149.9	60.0	213.7	153.8	144.3	82.6	2,439.8	217.2	0.0	0.0	680.1	0.0	3,157.3	5.9	6,077.3	10,975.2
C21T22 Pulp, paper, paper products, printing and publishing	674.2	38.9	8,258.6	1,159.1	51.0	14,516.6	135.9	2,683.5	907.6	2,113.6	352.7	544.4	290.1	2,592.1	734.5	0.0	0.0	1,371.0	0.0	1,069.9	193.5	1,068.6	4,723.4
C23 Coke, refined petroleum products and nuclear fuel	6,202.5	3,833.6	6,700.4	1,028.2	405.9	993.7	1,958.8	5,269.3	529.3	3,561.7	5,064.7	612.4	241.0	326.2	447.6	0.0	0.0	1,392.2	0.0	1,020.2	15,339.2	9,105.9	2,123.9
C24 Chemicals and chemical products	8,109.4	11,130.5	10,117.7	2,652.2	353.7	3,034.4	4,959.0	42,563.6	8,737.0	3,778.8	1,599.4	1,261.3	852.2	873.2	1,167.2	0.0	0.0	3,915.2	0.0	1,997.5	22,956.1	10,112.4	5,413.8
C25 Rubber and plastics products	1,179.3	106.0	9,694.4	634.5	47.9	1,385.5	288.8	1,425.4	1,560.9	324.9	146.2	360.0	372.3	3,614.0	2,099.6	0.0	0.0	5,100.5	0.0	1,040.2	146.6	9,411.1	3,860.0
C26 Other non-metallic mineral products	56.5	1,771.1	5,536.1	105.6	60.9	99.9	19.8	543.7	101.6	8,406.0	421.2	559.8	175.4	130.7	702.4	0.0	0.0	3,027.4	0.0	876.9	114.3	72,494.7	2,662.8
C27 Basic metals	225.0	3,696.0	225.4	44.1	21.1	136.3	117.6	443.3	1,169.6	817.9	39,467.8	16,865.9	5,024.6	3,574.7	8,794.8	0.0	0.0	14,111.9	0.0	3,603.8	755.6	53,975.6	2,081.8
C28 Fabricated metal products except machinery and equipment	684.4	421.9	2,595.5	116.8	65.1	1,119.9	414.5	611.4	298.9	116.3	601.6	2,049.1	1,275.0	769.8	1,156.0	0.0	0.0	3,398.0	0.0	672.8	739.9	17,727.6	6,669.6
C29 Machinery and equipment n.e.c	143.0	261.5	469.0	187.1	33.6	1,143.3	428.8	199.5	166.6	118.5	239.5	253.2	1,354.1	452.6	525.1	0.0	0.0	1,486.8	0.0	174.1	195.9	2,360.0	1,974.3
C30 Office, accounting and computing machinery	148.0	135.9	601.7	188.4	14.7	1,404.4	56.6	505.1	185.4	141.6	152.7	194.8	203.2	8,628.0	533.6	0.0	0.0	2,404.3	0.0	299.4	214.6	1,515.0	5,168.4
C31 Electrical machinery and apparatus n.e.c	71.3	58.9	287.4	73.0	7.5	956.8	37.6	95.5	90.7	49.7	260.2	279.1	313.2	489.0	981.4	0.0	0.0	842.9	0.0	170.5	120.8	2,717.9	1,119.3
C32 Radio, television and communication equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C33 Medical, precision and optical instruments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C34 Motor vehicles, trailers and semi-trailers	787.5	498.5	2,274.8	1,145.8	67.2	476.9	119.0	653.9	386.6	536.4	1,141.6	447.0	322.8	754.8	537.5	0.0	0.0	54,335.1	0.0	327.6	302.0	2,264.4	5,844.9
C35 Other transport equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C36T37 Manufacturing n.e.c; recycling	197.3	127.7	852.2	822.2	95.7	2,584.4	69.9	713.0	231.0	299.0	268.8	193.5	172.9	1,308.8	419.3	0.0	0.0	1,071.5	0.0	1,205.0	229.4	2,681.8	3,613.9
C40T41 Electricity, gas and water supply	5,027.8	2,597.4	11,563.4	3,273.4	499.8	2,631.5	312.5	3,604.9	2,409.7	3,866.5	7,353.5	1,577.8	690.7	2,703.4	1,604.3	0.0	0.0	3,932.2	0.0	1,414.1	32,492.2	2,941.1	15,827.2

C45 Construction	910,9	348,5	2.263,3	226,6	7,6	63,2	643,5	452,5	145,5	251,0	85,4	117,3	60,0	615,3	407,9	0,0	0,0	854,8	0,0	164,2	571,3	61.721,3	529,4
C50T52 Wholesale and retail trade; repairs	24.570,5	13.665,9	83.310,1	14.879,6	3.169,3	10.566,6	4.959,8	27.989,9	9.471,7	11.473,5	21.134,9	9.282,2	5.706,5	14.454,4	8.371,5	0,0	0,0	68.603,8	0,0	6.701,8	21.619,8	68.529,1	40.340,3
C55 Hotels and restaurants	72,8	1.172,4	1.263,1	1.421,8	52,2	241,5	99,2	1.352,8	468,9	264,6	219,0	508,2	341,4	2.642,1	1.028,0	0,0	0,0	2.636,5	0,0	766,3	665,1	3.033,5	645,6
C60T63 Transport and storage	8.608,5	5.532,2	28.720,4	5.332,8	1.355,9	4.698,4	1.620,4	9.517,1	3.607,9	3.685,4	4.846,0	2.525,2	1.854,4	7.643,5	3.552,3	0,0	0,0	16.619,0	0,0	2.989,8	8.921,2	22.158,6	13.715,0
C64 Post and telecommunications	1.463,9	1.077,3	6.373,6	964,7	132,4	977,9	306,8	6.170,6	618,8	922,6	214,9	789,3	419,3	1.522,4	493,7	0,0	0,0	3.020,3	0,0	802,9	972,3	5.659,9	19.598,4
C65T67 Finance and insurance	5.636,4	11.654,4	5.521,5	983,6	83,4	1.148,2	1.334,9	3.580,0	430,9	1.120,2	797,8	778,9	393,2	447,1	388,1	0,0	0,0	2.417,0	0,0	321,3	3.852,0	5.649,8	43.075,7
C70 Real estate activities	108,0	358,1	5.164,0	2.467,6	196,2	1.519,7	198,9	2.184,3	1.755,1	1.247,9	470,4	1.262,0	686,6	2.054,0	1.269,0	0,0	0,0	2.290,3	0,0	1.628,7	210,8	4.204,7	42.712,3
C71 Renting of machinery and equipment	790,8	8.365,3	4.171,7	449,3	20,2	668,1	157,4	3.367,7	610,0	891,1	223,2	332,2	772,2	1.606,5	499,9	0,0	0,0	3.267,1	0,0	257,1	820,8	8.003,6	5.647,8
C72 Computer and related activities	17,9	19,2	83,0	15,3	1,9	11,7	3,5	29,4	11,8	9,2	4,1	11,7	8,6	16,7	6,0	0,0	0,0	15,1	0,0	11,2	6,6	266,9	1.588,2
C73 Research and development	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
C74 Other Business Activities	5.342,6	10.235,4	30.199,7	7.373,2	419,2	4.752,2	12.917,8	16.453,3	4.867,2	6.457,9	3.555,9	4.003,8	2.755,9	10.060,1	3.540,0	0,0	0,0	11.507,9	0,0	3.363,1	4.318,9	27.100,6	88.511,3
C75 Public admin. and defence; compulsory social security	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1.277,8	30,5	3,1
C80 Education	0,9	1,7	112,0	12,1	0,7	17,1	4,1	157,6	6,2	17,7	1,9	8,2	5,3	11,0	7,2	0,0	0,0	61,2	0,0	11,8	122,5	68,4	180,8
C85 Health and social w ork	12,4	6,7	48,2	10,7	1,9	6,9	2,7	17,2	6,7	6,5	10,4	6,1	3,6	10,2	5,7	0,0	0,0	38,1	0,0	5,5	10,5	39,7	67,0
C90T93 Other community, social and personal services	45,8	274,4	224,8	38,9	4,2	47,0	8,6	113,1	27,1	32,0	19,6	19,3	24,4	61,4	29,8	0,0	0,0	115,2	0,0	38,0	136,7	645,4	530,4
C95 Private households w ith employed persons	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Domestic purchases by non-residents	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Non-comparable imports (c/f/cb adj, Direct purchases abroad by residents)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Total Imports	29.015,5	15.992,5	72.564,1	77.698,2	2.869,9	24.195,3	11.282,6	46.758,9	36.128,3	14.061,2	30.403,9	30.619,2	25.143,0	308.237,1	77.702,5	0,0	0,0	247.861,8	0,0	43.324,5	22.750,4	67.147,3	76.717,0
Total Intermediate consumption /final use at basic prices	172.364,2	100.237,4	563.405,5	158.516,6	23.024,1	74.908,4	201.355,7	268.855,8	76.127,7	75.027,8	135.164,1	75.928,9	50.032,7	379.157,8	117.715,1	0,0	0,0	460.672,2	0,0	79.698,7	142.356,8	483.348,0	415.252,2
Taxes, less subsidies, on products	1.798,6	1.013,3	1.641,0	1.132,8	157,6	404,8	638,8	1.780,5	292,9	970,2	1.535,3	340,7	250,2	325,2	304,0	0,0	0,0	1.532,0	0,0	518,7	2.613,9	3.767,2	999,3
Taxes, less subsidies, on imports	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Intermediate consumption INTI/ Final use at purchasers prices	174.162,8	101.250,7	565.046,5	159.649,4	23.181,7	75.313,1	201.994,4	270.636,3	76.420,6	75.998,1	136.699,4	76.269,6	50.282,8	379.483,0	118.019,1	0,0	0,0	462.204,2	0,0	80.217,5	144.970,7	487.115,1	416.251,5
Value added at basic prices VALU	279.600,6	439.201,6	370.036,9	85.265,7	17.044,1	40.421,4	40.558,8	132.993,2	37.027,8	85.213,3	77.290,7	40.350,9	30.266,1	74.602,0	41.394,1	0,0	0,0	202.929,3	0,0	46.993,9	93.789,4	462.968,9	1.146.620,9
Gross Operating Surplus GOPS	229.272,4	148.859,9	278.267,1	46.737,3	11.336,3	24.369,1	23.305,0	83.815,5	19.733,7	60.978,9	58.009,9	21.871,2	8.200,9	42.445,6	21.561,6	0,0	0,0	131.423,7	0,0	25.094,4	57.847,4	270.179,1	855.924,4
Compensation of Employees LABR	50.211,9	34.663,0	89.920,2	37.749,5	5.660,5	15.552,0	17.206,1	47.150,0	16.812,9	23.891,1	18.899,0	17.981,4	21.674,2	31.406,2	19.363,7	0,0	0,0	70.576,7	0,0	21.473,5	35.314,2	191.051,7	279.258,8
Other taxes less subsidies on production OTXS	116,3	255.678,8	1.849,6	779,0	47,2	500,3	47,7	2.027,7	481,0	343,3	381,7	498,3	390,9	750,2	468,8	0,0	0,0	928,9	0,0	426,0	627,8	1.738,0	11.437,7
Gross output (Production) at basic prices PROD	453.763,4	540.452,2	935.083,4	244.915,1	40.225,8	115.734,6	242.553,3	403.629,5	113.448,2	161.211,4	213.990,1	116.620,5	80.548,9	454.085,0	159.413,1	0,0	0,0	665.133,4	0,0	127.211,3	238.760,1	950.084,0	1.562.872,4

C55 Hotels and restaurants	C60T63 Transport and storage	C64 Post and telecommunications	C65T67 Finance and insurance	C70 Real estate activities	C71 Renting of machinery and equipment	C72 Computer and related activities	C73 Research and development	C74 Other Business Activities	C75 Public admin. and defence; compulsory social security	C80 Education	C85 Health and social work	C90T93 Other community, social and personal services	C95 Private households with employed persons	Total Intermediate Consumption	Households Final Consumption HHFC	Non-Profit Institutions Serving Households NPISH	General Government Final Consumption GGFC	Gross Fixed Capital Formation GFCF	Changes in Inventories CHINV	Valuables VLBL	Exports EXPO	Imports IMPO	Discrepancy DISC	Total output
69,4	3,0	0,9	0,3	1,0	2,7	0,0	0,0	16,5	4,3	10,2	10,0	5,9	0,0	223.435,4	174.033,8	0,0	0,1	8.737,5	12.185,1	0,0	35.371,6	0,0	0,0	453.763,4
115,2	31,5	5,5	3,1	280,6	0,8	0,1	0,0	22,0	5,9	2,7	5,0	5,2	0,0	293.171,6	466,8	0,0	0,0	59.861,2	3.303,7	0,0	183.649,0	0,0	0,0	540.452,2
5.222,4	1.096,7	231,4	115,4	148,2	128,1	37,4	0,0	1.072,1	242,1	552,4	512,4	767,2	0,0	148.623,5	679.846,2	0,0	0,1	1.931,5	65.007,5	0,0	39.674,7	0,0	0,0	935.083,4
1.022,7	2.093,6	234,3	26,9	144,0	73,9	9,3	0,0	1.158,5	1.174,9	245,7	770,9	952,0	0,0	55.198,7	73.236,8	0,0	0,5	360,5	10.669,9	0,0	105.448,8	0,0	0,0	244.915,1
6,7	58,5	27,0	4,4	27,3	1,2	0,2	0,0	17,0	6,1	2,4	44,4	13,2	0,0	29.380,7	6.319,1	0,0	0,0	64,0	1.843,5	0,0	2.618,3	0,0	0,0	40.225,8
1.297,2	3.715,2	1.193,4	1.530,0	4.514,3	142,3	39,0	0,0	12.383,1	2.235,2	1.486,9	965,7	1.915,3	0,0	74.896,4	17.972,4	0,0	1.688,1	217,9	7.530,1	0,0	13.429,6	0,0	0,0	115.734,6
2.406,4	57.511,0	4.112,4	18,2	1.321,7	319,4	13,4	0,0	2.514,5	4.137,5	357,3	1.086,5	922,0	0,0	140.830,7	61.595,9	0,0	0,0	674,0	23.704,9	0,0	15.747,9	0,0	0,0	242.553,3
6.531,3	6.233,1	745,4	32,9	6.283,9	473,5	40,1	0,0	7.337,2	4.305,8	777,0	16.185,7	6.954,9	0,0	200.985,6	112.078,2	0,0	1,2	1.815,4	40.724,1	0,0	48.025,0	0,0	0,0	403.629,5
1.026,7	1.658,1	131,1	26,8	202,0	78,6	28,4	0,0	2.726,4	118,0	201,1	838,9	1.393,2	0,0	51.287,4	17.932,3	0,0	3,7	772,8	7.821,8	0,0	35.630,1	0,0	0,0	113.448,2
304,2	1.069,4	352,7	3,9	1.075,1	25,2	0,7	0,0	213,2	627,7	25,0	22,6	260,1	0,0	101.866,3	30.433,1	0,0	0,0	346,3	9.226,2	0,0	19.339,5	0,0	0,0	161.211,4
62,9	1.130,3	1.761,6	3,9	767,5	64,4	30,6	0,0	155,3	77,0	8,2	20,3	29,3	0,0	159.044,3	2.869,7	0,0	0,0	1.008,9	17.003,3	0,0	34.063,8	0,0	0,0	213.990,1
84,7	587,3	644,7	437,2	128,5	57,4	15,1	0,0	1.114,6	562,3	85,7	88,1	116,6	0,0	44.415,3	19.049,0	0,0	0,4	3.374,0	6.869,1	0,0	42.912,7	0,0	0,0	116.620,5
63,8	653,3	75,4	23,8	259,1	287,5	3,6	0,0	155,6	329,4	62,5	84,1	70,2	0,0	13.205,5	3.351,0	0,0	0,2	20.341,2	2.924,6	0,0	40.726,3	0,0	0,0	80.548,9
141,5	570,5	1.784,7	92,7	318,8	111,0	12,9	0,0	595,6	1.125,5	122,4	631,7	230,1	0,0	27.169,5	31.691,0	0,0	21,6	7.330,7	7.269,8	0,0	380.602,5	0,0	0,0	454.085,0
61,4	289,8	749,4	25,1	213,5	22,0	63,8	0,0	134,2	247,5	63,2	154,1	57,9	0,0	10.243,1	22.663,3	0,0	0,6	12.873,5	5.386,5	0,0	108.246,1	0,0	0,0	159.413,1
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
504,5	8.356,5	375,5	355,4	339,0	207,4	21,8	0,0	1.891,5	942,4	375,0	306,3	619,0	0,0	87.520,6	97.830,6	0,0	20,5	86.965,7	6.792,8	0,0	386.003,3	0,0	0,0	665.133,4
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
282,6	975,4	201,6	487,1	629,2	170,2	23,0	0,0	840,5	571,9	364,8	1.864,1	969,3	0,0	22.221,1	32.380,5	0,0	9,1	6.670,9	5.661,3	0,0	60.268,5	0,0	0,0	127.211,3
10.617,8	4.341,1	1.758,8	834,1	8.054,3	222,8	60,9	0,0	3.433,3	7.432,0	2.740,6	3.540,5	2.956,9	0,0	152.646,5	84.141,2	0,0	0,0	1.087,3	2,7	0,0	882,5	0,0	0,0	238.760,1

Source: OECD (2011)

841,7	1.043,2	36,3	503,3	3.240,0	17,8	11,2	0,0	575,5	1.585,0	1.093,4	416,5	131,0	0,0	79.934,1	1.181,9	0,0	28,7	868.939,2	0,0	0,0	0,0	0,0	0,0	950.084,0
7.176,8	46.702,1	8.839,8	3.628,7	7.328,2	1.048,6	154,7	0,0	17.514,6	11.191,9	3.176,6	10.155,4	5.163,4	0,0	590.881,7	707.879,8	0,0	6,1	87.339,0	951,9	0,0	175.813,9	0,0	0,0	1.562.872,4
245,4	4.548,5	455,8	1.325,3	307,4	88,4	40,5	0,0	4.017,2	5.138,7	959,1	945,5	318,8	0,0	37.285,8	250.431,3	0,0	275,8	1.637,2	17,1	0,0	267,9	0,0	0,0	289.915,1
2.897,8	22.854,2	7.192,0	1.683,0	2.813,9	360,8	66,6	0,0	8.477,2	4.905,4	1.401,4	3.125,4	2.733,7	0,0	216.015,7	512.005,1	0,0	0,1	20.709,4	7,7	0,0	55.549,8	0,0	0,0	804.287,8
4.997,8	6.568,6	14.368,1	7.399,3	8.079,5	614,8	189,4	0,0	15.822,5	9.703,4	8.489,2	2.717,5	6.149,5	0,0	137.601,5	158.132,8	0,0	67,2	470,2	45,0	0,0	8.908,7	0,0	0,0	305.225,4
5.178,9	16.995,2	5.244,1	34.281,9	2.862,9	569,0	29,7	0,0	5.012,8	8.837,4	576,1	395,3	1.450,6	0,0	171.048,3	93.423,4	0,0	30.058,0	0,0	0,0	0,0	12.574,4	0,0	0,0	307.104,0
7.773,6	6.539,0	7.186,6	9.325,5	7.946,9	886,7	170,6	0,0	16.028,5	4.349,5	4.832,1	4.478,6	4.953,9	0,0	146.460,3	656.711,7	0,0	0,9	219,5	0,1	0,0	92,7	0,0	0,0	803.485,2
1.823,3	5.268,7	3.496,5	646,7	237,7	417,8	44,4	0,0	1.841,3	890,4	462,8	119,8	832,4	0,0	57.003,8	8.886,5	0,0	0,0	161,4	7,4	0,0	177,4	0,0	0,0	66.236,4
217,2	72,4	37,0	501,0	135,6	8,9	2,9	0,0	158,6	322,0	65,4	16,2	23,0	0,0	3.698,1	1.369,8	0,0	40,8	0,7	0,1	0,0	322,2	0,0	0,0	5.431,7
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
13.882,5	32.519,8	31.822,3	36.665,5	21.298,1	2.057,2	1.270,0	0,0	46.713,8	24.055,0	12.532,3	10.696,7	9.596,4	0,0	500.845,1	134.391,6	0,0	12.743,4	4.141,3	248,5	0,0	6.196,6	0,0	0,0	658.566,5
0,0	3.222,0	19,1	1.199,3	0,0	6,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	5.758,8	4.263,5	0,0	412.665,2	0,0	0,0	0,0	0,0	0,0	0,0	422.687,8
41,3	324,3	46,4	843,9	62,5	5,5	1,7	0,0	327,5	3.790,1	725,3	253,6	115,4	0,0	7.345,9	141.866,4	0,0	268.500,4	2.162,2	6,5	0,0	42,8	0,0	0,0	419.924,1
12,3	28,2	11,8	11,8	12,4	1,5	0,3	0,0	28,0	11,5	7,3	11,1	8,4	0,0	461,1	131.595,2	0,0	161.936,4	216,4	1,0	0,0	104,5	0,0	0,0	294.314,7
2.156,3	1.296,0	1.384,3	2.159,3	112,4	33,2	4,0	0,0	2.484,2	1.446,6	262,4	1.398,1	1.341,4	0,0	16.514,2	167.033,7	0,0	4.252,4	433,6	38,4	0,0	514,2	0,0	0,0	188.786,4
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	39.374,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	39.374,5
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	-102.560,1	0,0	0,0	0,0	0,0	0,0	102.560,1	0,0	0,0	0,0
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	141.282,4	0,0	269.065,5	0,0	0,0	0,0	0,0	410.347,9	0,0	820.695,8
3.960,9	50.785,9	21.920,7	12.975,6	4.564,3	1.379,5	230,8	0,0	32.714,5	4.308,8	3.757,7	11.218,4	4.490,0	0,0	1.412.779,8	255.513,6	0,0	402,3	225.413,9	63.482,1	0,0	0,0	1.957.591,6	0,0	3.915.183,3
81.027,2	289.142,3	116.446,7	117.171,3	83.709,6	9.884,6	2.617,1	0,0	187.497,4	104.681,2	45.824,2	73.079,2	55.546,1	0,0	5.219.776,3	4.770.673,8	0,0	1.161.789,3	1.426.277,4	298.732,4	0,0	1.915.765,5	2.367.939,5	0,0	17.160.954,2
399,3	16.130,9	1.137,0	-51,3	117,6	95,9	4,4	0,0	1.040,9	938,4	88,6	423,4	183,6	0,0	42.525,7	351.640,3	0,0	0,0	4.616,7	0,0	0,0	0,0	0,0	0,0	398.782,7
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
81.426,6	305.273,2	117.583,7	117.120,1	83.827,2	9.980,5	2.621,5	0,0	188.538,3	105.619,5	45.912,8	73.502,6	55.729,7	0,0	5.262.302,0	5.122.314,1	0,0	1.161.789,3	1.430.894,1	298.732,4	0,0	1.915.765,5	2.367.939,5	0,0	17.559.737,0
208.488,5	499.014,6	187.641,8	189.984,0	719.658,0	56.255,9	2.810,2	0,0	470.028,2	317.068,0	374.011,4	220.812,1	133.056,7	39.374,5	7.162.773,3										
149.738,2	329.078,9	135.301,0	126.226,6	704.988,9	53.562,7	927,8	0,0	278.646,1	1.930,2	88.425,0	92.839,2	106.522,8	0,0	4.487.420,8										
57.604,6	169.454,3	51.351,2	59.461,0	7.083,5	2.522,2	1.841,0	0,0	185.445,5	312.764,7	284.593,4	127.348,0	25.813,7	39.374,5	2.370.474,4										
1.145,7	481,4	989,6	4.296,4	7.585,6	171,1	41,5	0,0	5.936,6	2.373,1	993,0	624,9	720,2	0,0	304.878,0										
289.915,1	804.287,8	305.225,4	307.104,0	803.485,2	66.236,4	5.431,7	0,0	658.566,5	422.687,6	419.924,1	294.314,7	188.786,4	39.374,5	12.425.075,3										

Appendix 2: Matrix of regional multipliers for the SKBR case study

Column Sector	C01T05 Agriculture, hunting, forestry and fishing	C10T14 Mining and quarrying	C15T16 Food products, beverages and tobacco	C17T19 Textiles, textile products, leather and footwear	C20 Wood and products of wood and cork	C21T22 Pulp, paper, printing and publishing	C23 Coke, refined petroleum products and nuclear fuel	C24 Chemicals and chemical products	C25 Rubber and plastics products	C26 Other non-metallic mineral products	C27 Basic metals	C28 Fabricated metal products except machinery and equipment	C29 Machinery and equipment n.e.c	C30 Office, accounting and computing machinery	C31 Electrical machinery and apparatus n.e.c	C32 Radio, television and communication equipment	C33 Medical, precision and optical instruments
Row Sector																	
C01T05 Agriculture, hunting, forestry and fishing	1,005	0,000	0,009	0,013	0,009	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C10T14 Mining and quarrying	0,000	1,001	0,000	0,000	0,000	0,000	0,046	0,219	0,000	0,004	0,071	0,000	0,003	0,000	0,000	0,000	0,000
C15T16 Food products, beverages and tobacco	0,072	0,001	1,071	0,017	0,001	0,004	0,000	0,004	0,001	0,001	0,001	0,002	0,002	0,001	0,001	0,000	0,000
C17T19 Textiles, textile products, leather and footwear	0,001	0,000	0,000	1,005	0,000	0,003	0,000	0,002	0,000	0,000	0,004	0,000	0,002	0,000	0,000	0,000	0,000
C20 Wood and products of wood and cork	0,001	0,001	0,001	0,001	1,083	0,022	0,000	0,001	0,001	0,002	0,001	0,002	0,001	0,005	0,022	0,000	0,000
C21T22 Pulp, paper, printed products, printing and publishing	0,002	0,000	0,001	0,005	0,000	1,016	0,000	0,007	0,001	0,002	0,002	0,001	0,004	0,001	0,001	0,000	0,000
C23 Coke, refined petroleum products and nuclear fuel	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C24 Chemicals and chemical products	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000	0,007	0,000	0,000	0,000	0,000	0,000	0,000
C25 Rubber and plastics products	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C26 Other non-metallic mineral products	0,001	0,004	0,008	0,001	0,001	0,001	0,000	0,002	0,001	1,042	0,003	0,005	0,003	0,000	0,004	0,000	0,000
C27 Basic metals	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,001	0,000	0,000	0,000	0,000
C28 Fabricated metal products except machinery and equipment	0,002	0,001	0,002	0,001	0,001	0,001	0,001	0,002	0,001	0,000	0,003	1,007	0,016	0,001	0,003	0,000	0,000
C29 Machinery and equipment n.e.c	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,001	0,000	1,000	0,000	0,000	0,000	0,000
C30 Office, accounting and computing machinery	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000	0,000
C31 Electrical machinery and apparatus n.e.c.	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000
C32 Radio, television																	

and communication equipment		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000
C33 Medical, precision and optical instruments		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000
C34 Motor vehicles, trailers and semi-trailers		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C35 Other transport equipment		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C36T37 Manufacturing n.e.c; recycling		0,001	0,000	0,001	0,004	0,001	0,003	0,000	0,002	0,002	0,001	0,001	0,002	0,002	0,002	0,002	0,000	0,000
C40t41 Electricity, gas and water supply		0,015	0,007	0,017	0,018	0,017	0,029	0,002	0,014	0,026	0,031	0,042	0,017	0,012	0,008	0,013	0,000	0,000
C45 Construction		0,002	0,001	0,001	0,001	0,000	0,001	0,001	0,001	0,000	0,001	0,001	0,001	0,001	0,000	0,001	0,000	0,000
C50T52 Wholesale and retail trade; repairs		0,065	0,028	0,101	0,069	0,089	0,101	0,024	0,083	0,088	0,079	0,108	0,085	0,079	0,034	0,056	0,000	0,000
C55 Hotels and restaurants		0,001	0,003	0,002	0,006	0,002	0,003	0,001	0,005	0,005	0,002	0,002	0,005	0,005	0,006	0,007	0,000	0,000
C60T63 Transport and storage		0,020	0,011	0,009	0,023	0,007	0,042	0,002	0,027	0,008	0,005	0,024	0,009	0,024	0,004	0,005	0,000	0,000
C64 Post and telecommunications		0,004	0,002	0,001	0,004	0,000	0,006	0,000	0,016	0,001	0,001	0,002	0,001	0,006	0,000	0,000	0,000	0,000
C65T67 Finance and insurance		0,013	0,014	0,001	0,004	0,000	0,004	0,001	0,012	0,000	0,001	0,005	0,001	0,005	0,000	0,000	0,000	0,000
C70 Real estate activities		0,001	0,001	0,002	0,011	0,001	0,014	0,000	0,007	0,003	0,002	0,003	0,004	0,009	0,001	0,002	0,000	0,000
C71 Renting of machinery and equipment		0,003	0,016	0,005	0,003	0,001	0,007	0,002	0,013	0,006	0,006	0,003	0,003	0,010	0,004	0,004	0,000	0,000
C72 Computer and related activities		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C73 Research and development		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C74 Other Business Activities		0,019	0,023	0,033	0,037	0,010	0,050	0,044	0,055	0,037	0,032	0,024	0,040	0,042	0,019	0,020	0,000	0,000
C75 Public admin. and defence; compulsory social security		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C80 Education		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C85 Health and social work		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
C90T93 Other community, social and personal services		0,000	0,001	0,000	0,000	0,000	0,001	0,000	0,001	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000
C95 Private households with employed persons		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000

C34 Motor vehicles, trailers and semi-trailers	C35 Other transport equipment	C36T37 Manufacturing n.e.c; recycling	C40T41 Electricity, gas and water supply	C45 Construction	C50T52 Wholesale and retail trade; repairs	C55 Hotels and restaurants	C60T63 Transport and storage	C64 Post and telecommunications	C65T67 Finance and insurance	C70 Real estate activities	C71 Renting of machinery and equipment	C72 Computer and related activities	C73 Research and development	C74 Other Business Activities	C75 Public admin. and defence; compulsory social security	C80 Education	C85 Health and social work	C90T93 Other community, social and personal services	C95 Private households with employed persons
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,001	0,000	0,001	0,000	0,001	0,001	0,001	0,002	0,001	0,001	0,000	0,000	0,008	0,000	0,001	0,000	0,001	0,002	0,001	0,000
0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,001	0,000	0,000
0,001	0,000	0,025	0,000	0,008	0,003	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	0,000	0,001	0,000	0,001	0,000	0,000	0,002	0,004	0,006	0,003	0,000	0,008	0,000	0,002	0,001	0,003	0,003	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,004	0,000	0,006	0,000	0,082	0,001	0,000	0,002	0,001	0,000	0,002	0,000	0,001	0,000	0,000	0,001	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,002	0,000	0,002	0,000	0,016	0,001	0,000	0,001	0,002	0,002	0,000	0,000	0,003	0,000	0,001	0,001	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000

0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
1,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	1,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,001	0,000	1,007	0,000	0,003	0,001	0,000	0,001	0,001	0,002	0,001	0,000	0,005	0,000	0,001	0,001	0,001	0,006	0,001	0,000
0,009	0,000	0,015	1,158	0,008	0,012	0,019	0,008	0,009	0,005	0,012	0,003	0,016	0,000	0,007	0,021	0,008	0,015	0,019	0,000
0,000	0,000	0,001	0,000	1,023	0,000	0,000	0,001	0,000	0,002	0,004	0,000	0,002	0,000	0,000	0,001	0,003	0,002	0,000	0,000
0,108	0,000	0,059	0,020	0,086	1,028	0,004	0,062	0,036	0,018	0,012	0,003	0,041	0,000	0,030	0,030	0,010	0,039	0,009	0,000
0,004	0,000	0,006	0,003	0,004	0,001	1,001	0,006	0,002	0,005	0,001	0,001	0,009	0,000	0,007	0,013	0,003	0,004	0,002	0,000
0,006	0,000	0,006	0,001	0,012	0,001	0,000	1,007	0,025	0,007	0,003	0,000	0,015	0,000	0,003	0,003	0,004	0,011	0,001	0,000
0,001	0,000	0,001	0,000	0,002	0,001	0,000	0,003	1,006	0,025	0,004	0,000	0,036	0,000	0,003	0,003	0,012	0,006	0,001	0,000
0,000	0,000	0,000	0,000	0,001	0,001	0,000	0,004	0,008	1,007	0,001	0,000	0,006	0,000	0,001	0,001	0,001	0,001	0,000	0,000
0,001	0,000	0,003	0,000	0,002	0,003	0,000	0,005	0,025	0,032	1,002	0,000	0,034	0,000	0,005	0,002	0,012	0,016	0,001	0,000
0,006	0,000	0,003	0,003	0,010	0,004	0,003	0,007	0,012	0,003	0,001	1,006	0,010	0,000	0,003	0,003	0,001	0,001	0,005	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000	0,000	0,000	0,000	0,000
0,017	0,000	0,024	0,003	0,037	0,023	0,003	0,046	0,115	0,132	0,029	0,004	0,255	0,000	1,058	0,047	0,034	0,041	0,009	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,000	0,001	1,000	0,001	0,000	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000	0,000	0,000
0,000	0,000	0,000	0,000	0,001	0,000	0,002	0,002	0,005	0,008	0,000	0,000	0,002	0,000	0,004	0,004	0,001	0,005	1,007	0,000
0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	1,000

Source: own calculation based on the FLQ formula (Flegg et al. 1995).

Appendix 3: SIOT for Morocco (2003)

		Agriculture	Fishery	Extractive and transformative industries	Electricity and water	Construction and public works	Retail and repair	Hotels and restaurants
		A00	B05	CD	E00	F45	G00	H55
A00	Agriculture	12.244	35	35.591	59	54	24	562
B05	Fishery	14	84	2.082	0	0	49	323
CD	Extractive and transformative industries	4.495	424	65.807	1.440	18.280	2.061	3.963
E00	Electricity and water	1.214	36	5.849	1.331	254	256	471
F45	Construction and public works	22	1	128	2	112	141	2
G00	Retail and repair	1.698	37	2.153	72	435	11.606	60
H55	Hotels and restaurants	7	20	563	29	38	89	29
I0	Transport, postal services and telecommunication	512	61	3.503	97	501	853	74
J00	Financial services and insurance	25	292	1.339	120	422	416	93
K00	Real estate, renting and enterprise services	62	145	5.244	274	1.827	889	463
L75	Public administration and security	39	9	574	52	94	48	31
MN0	Education, health and security	206	0	29	0	4	0	0
OP0	Other non-financial services	4	4	1.007	162	41	39	41
	Total	20.543	1.147	123.868	3.637	22.061	16.472	6.112
	IMPORTS	3.359	402	43.181	1.516	11.766	1.089	515
	TOTAL AT BASIC PRICES	23.901	1.549	167.049	5.153	33.828	17.560	6.627
	TAXES LESS SUBSIDIES ON PRODUCTS	1.220	299	8.872	610	2.150	518	482
	TOTAL AT PURCHASERS' PRICES	25.122	1.848	175.921	5.763	35.978	18.078	7.109
	Gross added value	68.759	5.174	81.848	13.191	24.379	52.591	9.916
	Compensation of employees	4.377	2.129	28.879	3.390	6.443	11.588	2.197
	Gross salaries	4.187	1.870	24.644	2.829	5.616	9.963	1.869
	Effective social contributions	190	183	3.584	137	805	1.520	309
	Imputed social contributions	0	76	651	424	22	105	19
	Taxes on production	6	109	2.164	200	327	438	87
	Subsidies on production	0	0	-336	0	0	0	0
	Gross operating surplus/mixed income	64.376	2.936	51.141	9.601	17.609	40.565	7.632
	TOTAL	93.881	7.022	257.769	18.954	60.357	70.669	17.025

Transport, postal services and telecommunication	Financial services and insurance	Real estate, renting and enterprise services	Public administration and security	Education, health and security	Other non-financial services	Total output of industries	Final consumption		Gross fixed capital formation	Changes in inventories	Exports	Total output
							Households	Administration				
I0	J00	K00	L75	MN0	OP0							
62	11	10	52	29	57	48.789	30.235	788	2.711	4.062	7.295	93.881
0	0	0	29	2	0	2.583	1.979	0	9	1	2.450	7.022
3.002	209	474	1.544	640	183	102.523	72.612	240	20.615	2.549	59.230	257.769
821	205	152	576	251	142	11.557	5.955	0	238	6	1.198	18.954
18	134	6	244	37	2	847	1.942	0	56.166	1.361	41	60.357
319	15	86	9.415	303	6	26.205	39.296	13	4.113	63	979	70.669
398	418	171	518	127	5	2.412	13.958	11	10	0	634	17.025
2.029	791	285	911	211	35	9.863	20.705	18	219	7	20.085	50.897
1.564	20.943	462	129	205	16	26.024	2.476	0	51	1	611	29.163
5.720	1.774	1.519	1.288	355	488	20.048	18.514	1	6.443	1	8.501	53.507
263	191	126	69	29	42	1.567	4.130	49.336	541	18	402	55.994
1	115	0	59	49	0	462	8.928	35.183	15	1	36	44.625
14	3	237	53	48	85	1.738	6.529	3	31	1	77	8.379
14.211	24.807	3.529	14.887	2.283	1.061	254.620	227.259	85.593	91.160	8.070	101.539	768.242
3.524	552	370	1.016	428	136	67.854	31.878	235	20.397	2.172	26.619	149.155
17.735	25.360	3.899	15.903	2.712	1.197	322.474	259.137	85.828	111.557	10.243	128.158	917.397
1.980	1.032	250	598	154	76	18.241	15.025	190	8.802	439	6.762	49.460
19.715	26.392	4.149	16.501	2.866	1.273	340.715	274.162	86.018	120.360	10.682	134.920	966.857
31.182	2.771	49.358	39.493	41.759	7.106	427.527						
9.136	6.967	4.303	35.861	34.528	975	150.773						
8.013	5.689	3.845	32.537	31.821	769	133.652						
858	1.243	398	2.797	2.252	199	14.475						
265	35	60	527	455	7	2.646						
509	437	213	52	129	34	4.705						
0	-31	-460	0	0	-122	-949						
21.537	-4.602	45.302	3.580	7.102	6.219	272.998						
50.897	29.163	53.507	55.994	44.625	8.379	768.242						

Source: own calculation based on SUTs provided by HCP (personal communication)

Appendix 4: Matrix of regional multipliers for the SMNP case study

		Agriculture	Fishery	Extractive and transformative industries	Electricity and water	Construction and public works	Retail and repair	Hotels and restaurants	Transport, postal services and telecommunication	Financial services and insurance	Real estate, renting and enterprise services	Public administration and security	Education, health and security	Other non-financial services
		A00	B05	CD	E00	F45	G00	H55	I0	J00	K00	L75	MN0	OP0
A00	Agriculture	1,075	0,001	0,136	0,012	0,010	0,001	0,008	0,004	0,001	0,000	0,002	0,001	0,005
B05	Fishery	0,000	1,012	0,009	0,001	0,001	0,001	0,009	0,000	0,000	0,000	0,001	0,000	0,000
CD	Extractive and transformative industries	0,008	0,003	1,061	0,066	0,075	0,007	0,016	0,024	0,005	0,002	0,010	0,003	0,006
E00	Electricity and water	0,001	0,000	0,004	1,007	0,001	0,000	0,001	0,003	0,002	0,000	0,001	0,001	0,002
F45	Construction and public works	0,000	0,000	0,000	0,000	1,001	0,001	0,000	0,000	0,003	0,000	0,002	0,000	0,000
G00	Retail and repair	0,005	0,000	0,006	0,005	0,003	1,063	0,001	0,005	0,001	0,001	0,088	0,002	0,001
H55	Hotels and restaurants	0,000	0,001	0,002	0,002	0,001	0,001	1,002	0,008	0,017	0,003	0,009	0,003	0,001
I0	Transport, postal services and telecommunication	0,001	0,000	0,005	0,004	0,002	0,003	0,000	1,009	0,013	0,001	0,005	0,001	0,001
J00	Financial services and insurance	0,000	0,002	0,002	0,005	0,002	0,001	0,000	0,012	1,157	0,002	0,001	0,001	0,001
K00	Real estate, renting and enterprise services	0,000	0,002	0,013	0,016	0,012	0,005	0,003	0,066	0,046	1,010	0,011	0,003	0,023
L75	Public administration and security	0,000	0,000	0,001	0,003	0,001	0,000	0,000	0,002	0,004	0,001	1,000	0,000	0,002
MN0	Education, health and security	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,001	1,000	0,000
OP0	Other non-financial services	0,000	0,000	0,002	0,009	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	1,003

Source: own calculation based on the FLQ formula (Flegg et al. 1995).

Appendix 5: Calculation of SIOTs from SUTs

Input-output framework for domestic output and imports (Eurostat, 2008: 354)

Supply table

	Industries	Output	Imports	Supply
Products	V^T	q-m	m	q
Output	G^T			

Use table of domestic output

	Industries	Final demand	Use
Domestic products	U_d	Y_d	q-m
Imported products	U_m	Y_m	m
Value added	W		w
Output	g^T	y	

Integrated input-output framework

	Domestic products	Imported products	Industries	Final demand	Total
Domestic products			U_d	Y_d	q-m
Imported products	G^T		U_m	Y_m	m
Industries	V				q
Value added			W		w
Total	$(q\text{-}m)^T$	m^T	g^T	y	

Input-output table of domestic output—industry-by-industry

	Industries	Final demand	Output
Domestic industries	B_d	F_d	g
Imports from industries	B_m	F_m	m
Value added	W		w
Output	g^T	y	

Legend

V = Make matrix—transpose of supply matrix (industry by product)
V^T = Supply matrix (product by industry)
U = Use matrix for intermediates (product by industry)
Y = Final demand matrix (product by category)
F = Final demand matrix (industry by category)
B = Matrix for intermediates (industry by industry)
W = Value added matrix (components by industry)
diag(q-m) = Diagonal matrix of product output from domestic production
diag(g) = Diagonal matrix of industry output

y = Vector of final demand
w = Vector of value added
I = Unit matrix
q-m = Column vector of product output
$(q-m)^T$ = Row vector of product output
g = Column vector of industry output
g^T = Column vector of industry output
m = vector of total imports by product
m^T = Row vector of imports
^{d} = Index for domestic
^{m} = Index for imported

Input coefficients of use table

Z = U * inv(diag(g)) Input requirements for products per unit of output of an industry (intermediates)

L = W * inv(diag(g)) Input requirements for value added per unit of output of an industry (primary input)

Market share coefficients of supply table

C = V^T * inv(diag(g)) Product-mix matrix (share of each product in output of an industry)

D = V * inv(diag(q-m)) Market shares matrix (contribution of each industry to the output of a product)

Mathematical formulation of the assumption of fixed industry sales structures (Eurostat, 2008: 356)

In the case of the fixed product sales structures model, the transformation matrix is:

$T = V(diag(q-m))^{-1}$

Hence intermediates and final demand of the industry-by-industry input-output table are:

$B = T\,U$
$F = T\,Y$

Input coefficient matrices can be derived by dividing the columns by the total outputs of industries.

$A = B(diag(g))^{-1} = DZ$
$R = W(diag(g))^{-1}$

With

$Z = U(diag(g))^{-1}$ Matrix of industry intermediate input coefficients
$L = W(diag(g))^{-1}$ Matrix of industry value added coefficients
$D = V(diag(q-m))^{-1}$ Matrix of market shares

Appendix 6: Census/short questionnaire applied in the SKBR

Source: own survey

Soy alumno de la Universidad de Munich, Alemania. Estoy realizando un estudio sobre los efectos económicos del turismo en ésta zona. Podría responderme unas preguntas muy breves sobre su visita. La información obtenida será de gran utilidad. Sólo tardará dos minutos. Muchas gracias.
I am a Master's student at the University of Munich, Germany, and I am conducting a survey on the economic impacts of tourism in the Sian Ka'an area. Would you be so kind as to answer some short questions on your visit? This information will be very important for us, and it will only take two minutes. Thank you very much.

No: _____ fecha: _____ hora: _____ entrevistador: _____ lugar: _____ frecuencia: 2 – 4 – 6 – 8 – 10

	a	*b*	*c*	*d*
	residencia	**noches-pernocta**	**lugar-pernocta**	**individual o grupo**
a) ¿Dónde vive ud.? / Where are you from? **M=Mexicano** *1=Quintana Roo* *2=Yucatán* *3=Campeche* *4=D.F.* *5=Resto del país* **E=Extranjero** *6=EE.UU.* *7=Canadá* *8=Europa* *9=Resto del mundo*				
b) ¿Cuántas noches se quedará en la RBSK? / How many nights will you stay in the SKBR? *No. de noches*				
c) ¿En qué lugar se hospedará? / Where are you staying? *1=Punta Allen* *2=Playa del Carmen* *3=Tulúm – Tulúm Playa* *4=Punta Herrero/Mahahual* *5=otros*				
d) ¿Viaja por su cuenta o en grupo? / Are you travelling on your own or with a group? *I=individual* *G=grupo*				

Appendix 7: Long questionnaire applied in the SKBR (English version)

Dear guests,

We are students from the University of Munich, Germany. In cooperation with the Colegio de Michoacán, Mexico, we are conducting a survey on the economic effects of tourism in the Sian Ka'an area. Would you be so kind as to answer some questions on your visit? This information will be very important for us, and it will only take a few minutes. ***All of your answers will be absolutely confidential.***

No: _____ date: _____ time: _____

interviewer: _____ location: _____ rejections: _____

weather: [1]☐clear skies [2]☐partly cloudy [3]☐cloudy [4]☐overcast [5]☐rain

remarks: _____

1) What is the main purpose of your trip?

[1]☐vacation/leisure time [2]☐business [3]☐other

2) Total number of overnight stays during the entire trip:

_____ nights

3a) Where did you stay last night?

_____ [1]☐=hometown *(continue with question 4)*

[2]☐=holiday resort

3b) How long did you already stay there?

_____ nights

4a) Where will you stay tonight?

_____ [1]☐=hometown *(continue with question 5)*

[2]☐=holiday resort

4b) For how long will you stay there (from today)?

_____ nights ***(Note**: respondents answering "hometown" to both questions 3a) and 4a) may continue with question 8)*

5a) Is your trip to the Yucatán peninsula...

[1]☐a package tour

[2]☐self-organized tour (*continue with question 6)* [3]☐other: _____ (*continue with question 6)*

5b) for package tours: **5c) services included in the package:**

total price: _____ [1]☐MXN [2]☐USD [3]☐EUR _____

for ____ persons tour operator (name): _____ _____

6) Please describe the type of your accommodation:

[1]☐hotel/hostal/lodge/cabaña: price: _____ [1]☐MXN [2]☐USD [3]☐EUR for _____ persons

[2]☐relatives/friends [3]☐other:_____ [4]☐not specified

7) Are meals included in the price of your accommodation?

[1]☐no meals [2]☐breakfast [3]☐half board [4]☐full board [5]☐all incl. [6]☐not specified

8a) Is your trip to Sian Ka'an...

[1]☐same as 5) (*continue with question 9)* [3]☐self-organized tour (*continue with question 9)*

[2]☐a package tour [4]☐other: _____ (*continue with question 9)*

8b) for package tours: **4b) services included in the package:**

total price: _____ [1]☐MXN [2]☐USD [3]☐EUR _____

for ____ persons tour operator (name): _____ _____

9) Please name your two most important reasons for coming to Sian Ka'an:

_____ _____

10) How did you get to Sian Ka'an (means of transportation)?

[1]☐organized tour [2]☐(rented) car [3]☐public transp. [4]☐own car [5]☐other:_____

10.1) Considering souvenirs or eating in restaurants, how important is it to you to buy locally produced articles/food?

[1]☐very important [2]☐important [3]☐not very important [4]☐of no importance

11a) Are you aware that there is a 'Protected Natural Area' in this region?

[1]☐Yes [2]☐No *(continue with question 12)*

11b) Do you remember what kind of 'Protected Area' it is?

[1]☐National Park [2]☐Biosphere Reserve [3]☐other [4]☐I don't know

11c) In your decision to visit the SKBR, how important was the fact that this is a 'Protected Natural Area'?

[1]☐very important [2]☐important [3]☐not very important [4]☐of no importance

12) Are you visiting the SKBR region for the first time?

[1]☐yes [2]☐no, 2nd time [3]☐no, 3rd-5th time [4]☐no, 6th-10th time [5]☐no, 11 times or more

13) How long did you stay in the SKBR?

_____ [1]☐days [2]☐hours [3]☐minutes

14a) Have you visited -or do you plan to visit- other sites in the Sian Ka'an Biosphere Reserve?

[1]☐No *(continue with question 15)* [2]☐Yes [3]☐Maybe

14b) Which ones?

[1]☐_____ [2]☐_____ [3]☐_____

15) What are your main activities in the SKBR?

_____ _____

16) How much did you spend for you and your fellow travelers during your trip to Sian Ka'an?

	Nothing	***average expenses per day (so far)***	*Where?*	*sum*	*number of days*	*number of persons*
a) organized tour (services included: _____ tour operator: _____)	[0]☐	_____ [1]☐MXN [2]☐USD [3]☐EUR	[1]☐SKBR [2]☐_____			
b) accommodation	[0]☐	_____ [1]☐MXN [2]☐USD [3]☐EUR	[1]☐SKBR [2]☐_____			
c) food/beverages (restaurants)	[0]☐	_____ [1]☐MXN [2]☐USD [3]☐EUR	[1]☐SKBR [2]☐_____			
d) souvenirs/craftwork	[0]☐	_____ [1]☐MXN [2]☐USD [3]☐EUR	[1]☐SKBR [2]☐_____			
e) other retail	[0]☐	_____ [1]☐MXN [2]☐USD [3]☐EUR	[1]☐SKBR [2]☐_____			
f) admission SKBR	[0]☐	_____ [1]☐MXN [2]☐USD [3]☐EUR	[1]☐SKBR [2]☐_____			
g) tip	[0]☐	_____ [1]☐MXN [2]☐USD [3]☐EUR	[1]☐SKBR [2]☐_____			
h) other services: _____ _____	[0]☐ [0]☐	_____ [1]☐MXN [2]☐USD [3]☐EUR _____ [1]☐MXN [2]☐USD [3]☐EUR	[1]☐SKBR [2]☐_____ [1]☐SKBR [2]☐_____			

17) Where do you live (permanently)?

[1]☐Mexico (state:_____) [2]☐US (state:_____) [3]☐other: _____

18) Please tell us your age and the age of your fellow travelers:

_____[1]☐m [2]☐f _____[1]☐m [2]☐f _____[1]☐m [2]☐f _____[1]☐m [2]☐f

_____[1]☐m [2]☐f _____[1]☐m [2]☐f _____[1]☐m [2]☐f _____[1]☐m [2]☐f

19) Which occupation group do you belong to?

[1]☐self-employed [2]☐senior official/manager [3]☐blue-collar worker/craftsman

[4]☐homemaker [5]☐retiree [6]☐employee/public official

[7]☐student/trainee/apprentice [8]☐not employed [9]☐other: _____

Source: own survey

INSTITUT FÜR WIRTSCHAFTSGEOGRAPHIE
LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

Feuille de dénombrement PNSM

Enquêteur: _____ Date: _____ Site: _____

Heure début du dénombrement: _____ **Heure fin du dénombrement:** _____ **(Utilisez une nouvelle feuille par séquence !)**

fréquence	nombre (## ## //…)	total	a	b	c	d	e	f
piéton 1 5 10 15 20 25 30 35 40								
véhicule 1 5 10 15 20 25 30 35 40								
buggy 1 5 10 15 20 25 30 35 40								
cavalier 1 5 10 15 20 25 30 35 40								
autres: _____ 1 5 10 15 20 25 30 35 40								

a: Où-est-ce que vous habitez ?
1 = Maroc (province Inezgane Ait Melloul)
2 = Maroc (Chtouka Ait Baha)
3 = Maroc (province Tiznit)
4 = Maroc (province Agadir)
5 = Maroc (autres)
6 = France
7 = Allemagne
8 = Grande Bretagne
9 = Espagne
10 = Pays-Bas
11 = Italie
12 = Europe (autres)
13 = autres pays

b: nombre de nuits dans le PNSM

c: endroit d'hébergement
1 = Agadir
2 = Tifnit
3 = Sidi R'bat
4 = Sidi Ouassai
5 = Tiznit
6 = Aglou
7 = autres

d: type d'hébergement
1 = hôtel
2 = famille/amis
3 = camping
4 = maison de vacances
5 = propre maison
6 = autres

e: catégorie de l'hébergement
0 = -
1 = *
2 = **
3 = ***
4 = ****
5 = *****

f: excursion à forfait ou individuelle ?
1 = à forfait
2 = individuelle

Source: own survey

Appendix 9: Long questionnaire applied in the SMNP (English version)

Dear guests,

We're students from the University of Agadir. In cooperation with the GTZ (German development cooperation), the Moroccan High Commissariat of Water and Forests and the University of Munich (Germany) we are conducting a survey on the economic effects of tourism in this area. Would you be so kind as to answer some questions on your visit? This information will be very important for us and it will only take 10 minutes. ***All of your answers will be absolutely confidential****.*

No: _____ date: _____ heure: _____ enquêteur: _____ site: _____ rejets: _____

temps: [1]☐dégagé [2]☐peu nuageux [3]☐nuageux [4]☐couvert [5]☐pluie

activité: [1]☐péaton [2]☐véhicule [3]☐buggy [4]☐cavalier

remarques: _____

1) What is the main reason for your trip to Morocco/to this region?

[1]☐vacation/leisure time [2]☐business [3]☐other: _____

2) Total number of overnight stays during the entire trip:

_____ nights

3a) Where did you stay last night?

_____ [1]☐=hometown *(continuez avec question 4)*

[2]☐=holiday resort

3b) How long did you already stay there?

_____ nights

4a) Where will you stay tonight?

_____ [1]☐=hometown *(continuez avec question 5)*

[2]☐=holiday resort

4b) For how long will you stay there (from today)?

_____ nuits ***(Remarque****: visiteurs qui répondent « lieu d'origine » aux questions 3a) et 4a) continuent avec la question 8)*

5a) Is your trip to this region...

[1]☐a package tour

[2]☐a self-organized trip (*continuez avec question 6)* [3]☐other: _____ (*continuez avec question 6)*

5b) for package tours:

total price: _____ [1]☐Dh [2]☐EUR

for ____ persons tour operator (name): _____ place: _____

5c) services included in the package:

[1]☐flight [2]☐hotel [3]☐excursion [4]☐others: _____

6) Please describe the type of your accommodation:

[1]☐hotel: price: _____ [1]☐Dh [2]☐EUR for _____ persons category: _____ stars

[2]☐relatives/friends [3]☐camping [4]☐vacation apartment [5]☐other: _____

7) Are meals included in the price of your accommodation?

[1]☐no meals [2]☐breakfast [3]☐half board [4]☐full board [5]☐all inclusive [6]☐not specified

8) Please name the two most important reasons your visit today:

_____ _____

9) Do you know the state of protection of the Souss-Massa area?

[1]☐National Park [2]☐Natural Park [3]☐Biosphere Reserve [4]☐I don't know

10) What are your main activities in this region?

_____ _____

11a) Are you aware that there is a National Park in this area?

[1]☐Yes [2]☐No *(continuez avec question 12)*

11b) In your decision to visit the Souss-Massa area, how important was the fact that this is a National Park?

[1]☐very important [2]☐important [3]☐not important [4]☐no importance at all

12a) Is your trip to the Souss-Massa National Park...

[1]☐a package tour

[2]☐a self-organized trip*(continuez avec question 13)* [3]☐other: _____ (*continuez avec question 13)*

12b) for package tours:

total price: _____ [1]☐Dh [2]☐EUR

for ____ persons tour operator (name): _____ place: _____

12c) services included in the package:

[1]☐accommodation [2]☐meals [3]☐beverages [4]☐other: _____

13) Is this your first visit to the Souss-Massa National Park?

[1]☐**No, not visited**

[2]☐yes [3]☐no, 2nd time [4]☐no, 3rd-5th time [5]☐no, 6th-10th time [6]☐no, 11 times or more

14) How many nights will you stay in the Souss-Massa National Park?

_____ nights

15) What other sites did you visit within the Souss-Massa National Park?

[1]☐_____ [2]☐_____ [3]☐_____

[4]☐Embouchure d'Oued Massa [5]☐Tifnit [6]☐Reserves with animals from the Sahara

Source: own survey

16) How much did you spend (or will you spend) for you and your fellow travelers during the trip to the SMNP?

	Nothing	*average expenses per day per person*	*Where?*	*sum*	*number of days*	*number of persons*
a) organized tour services included: _____ tour operator : _____	0☐	_____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____			
b) accommodation	0☐	_____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____			
c) meals/beverages (restaurants)	0☐	_____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____			
d) souvenirs	0☐	_____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____			
e) other retail (e.g. in supermarkets)	0☐	_____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____			
f) transport/car rental	0☐	_____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____			
g) guide	0☐	_____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____			
h) tip	0☐	_____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____			
i) other services (e.g. internet, laundry): _____ _____	0☐ 0☐	_____ 1☐Dh 2☐EUR _____ 1☐Dh 2☐EUR	1☐PNSM 2☐Agadir 3☐_____ 1☐PNSM 2☐Agadir 3☐_____			

17a) Do you know the tour "discovery of the fauna of the Sahara" in the Souss-Massa National Park?

1☐Yes 2☐No

17b) Do you consider the price of 550 Dh appropriate for this tour?

1☐Yes 2☐No

17c) What would be an appropriate price?

_____ Dh

18) Where do you live (permanently)?

1☐Morocco (province:_____) 2☐other country: _____

19) Please tell us your age and the age of your fellow travelers:

_____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f

_____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f _____1☐m 2☐f

20) Which occupation group do you belong to?

1☐self-employed 2☐senior official/manager 3☐blue-collar worker/craftsman
4☐homemaker 5☐retiree 6☐employee/public official
7☐student/trainee/apprentice 8☐not employed 9☐other: _____

21) What is your education level?

1☐no school-leaving qualification 2☐primary school 3☐secondary school 4☐A-levels
5☐technical 6☐university 7☐post-grad 8☐not specified

Source: own survey

GGW
Geographische Gesellschaft Würzburg

Würzburger Geographische Arbeiten

Based on demand-side surveys and income multipliers, this study analyzes the structure and economic importance of tourism in two highly frequented protected areas, the Sian Ka'an Biosphere Reserve in Mexico (SKBR) and the Souss-Massa National Park (SMNP) in Morocco. With regional income effects of approximately 1 million USD (SKBR) and approximately 1.9 million USD (SMNP), both the SKBR and the SMNP play important roles for the regional economies in underdeveloped rural regions. Visitor structures are heterogeneous: with regard to planning and marketing of nature-based tourism, protected area managers and political decision-takers are advised put a stronger focus on ecologically and economically attractive visitor groups.

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